

2010

## University of Arkansas Catalog of Studies, 2009-2010

University of Arkansas, Fayetteville

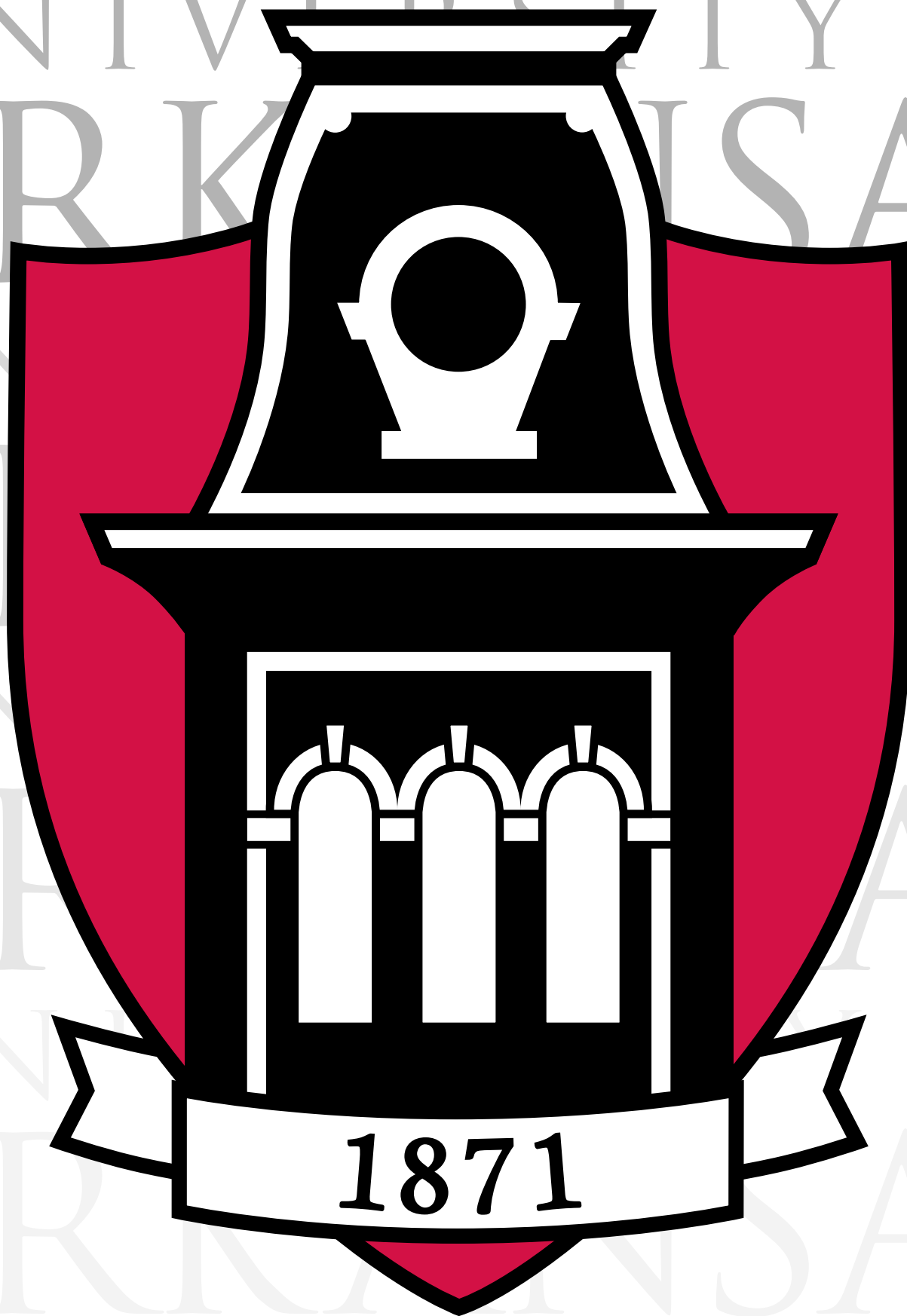
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UNIVERSITY OF ARKANSAS  
CATALOG OF STUDIES  
2009-2010

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School of Law Admissions, 110 Waterman Hall..... 575-3102  
Graduate School Admissions, 119 Ozark Hall ..... 575-6246  
International Admissions, 747 W. Dickson St. .... 575-6246

## Campus Tours & Visits

Office of Admissions, 200 Silas H. Hunt Hall ..... 575-5346

## Correspondence Courses

Independent Study  
Center for Continuing Education ..... 575-3647  
Toll-free.....1-800-638-1217

## Deans' Offices

Honors College..... 575-7678  
418 Administration Building  
Dale Bumpers College of Agricultural, Food and Life Sciences  
E-108 Agricultural, Food and Life Sciences Building.. 575-2252  
School of Architecture  
120 Vol Walker Hall ..... 575-4945  
J. William Fulbright College of Arts & Sciences  
525 Old Main ..... 575-4801  
Sam M. Walton College of Business  
301 Business Building..... 575-5949  
College of Education and Health Professions  
324 Graduate Education Bldg. .... 575-3208  
College of Engineering  
4183 Bell Engineering Center..... 575-3051  
Graduate School  
119 Ozark Hall ..... 575-4401  
School of Law  
110 Waterman Hall ..... 575-5601

## Fee Payments

Student Accounts  
101 Silas H. Hunt Hall..... 575-5651

## Financial Aid and Scholarships

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

## Greek Life

Arkansas Union A687 ..... 575-5001

## Honors Programs

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ADMN 418  
Dale Bumpers College of Agricultural, Food and Life Sciences  
Dean's Office AFLS E-108 ..... 575-2252  
Fay Jones School of Architecture  
120 Walker Hall ..... 575-4945  
J. William Fulbright College of Arts & Sciences  
517 Old Main ..... 575-2509  
Walton College of Business  
WCOB 328..... 575-4622  
College of Education and Health Professions  
Office of the Associate Dean, GRAD 317 ..... 575-4203  
College of Engineering  
BELL 3189..... 575-7381

## Housing

University Housing, 900 Hotz Hall..... 575-3951

## International Students

International Admissions, 747 W. Dickson St. .... 575-6246  
International Students and Scholars, 104 Holcombe Hall... 575-5003

## New Student Orientation

Arkansas Union A687 ..... 575-4200

## Registration

Office of the Registrar, 146 Silas H. Hunt Hall..... 575-5451

## ROTC

Air Force ROTC, 319 Memorial Hall..... 575-3651  
Army ROTC, 207 Military Science Building..... 575-4251

## Student Affairs

Vice Chancellor for Student Affairs  
325 Administration Building..... 575-5007  
Dean of Students  
325 Administration Building..... 575-5004

## Testing (ACT, CLEP, LSAT, GRE, etc.)

Testing Services, 730 Hotz Hall..... 575-3948

## Toll-Free Number ..... 1-800-377-8632

The following offices may be reached by dialing this toll-free number between 8 a.m. and 4:30 p.m. each weekday:  
Office of Admissions (undergraduate)  
Office of Scholarships and Financial Aid  
University Housing  
New Student Orientation

## Transcripts, Academic Records

Office of the Registrar  
146 Silas H. Hunt Hall..... 575-5451

## University Switchboard ..... 575-2000

## University of Arkansas

Mailing Address:  
Use an office and building address above, plus:  
1 University of Arkansas  
Fayetteville, AR 72701  
Telephone Area Code:479

## Veterans Affairs

Veterans Certification Officer  
146 Silas H. Hunt Hall..... 575-5454

VOLUME 103, UNIVERSITY OF ARKANSAS CATALOGS — JUNE 2009

Editor: Charlie Alison

Published by University Relations, 800 Hotz Hall,  
University of Arkansas, Fayetteville, AR 72701.

The Office of Affirmative Action, 221 Administration Building, has been designated to coordinate efforts to comply with the provisions of Title VI of the Civil Rights Act of 1964, Title IX of the Educational Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, and the Civil Rights Act of 1991.

# UNIVERSITY OF ARKANSAS

# 2009-2010 Catalog of Studies

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## **Welcome to the University of Arkansas**

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

Take every opportunity to consult your academic adviser to ensure that you are taking advantage of courses and University resources that will help you reach your educational and career goals and graduate on time. If you are not sure where to find your academic adviser, contact the dean's office of your college; the phone numbers are listed on the preceding page. If your major is "undecided," contact the advising office in the J. William Fulbright College of Arts and Sciences at 479-575-3307. Otherwise, call the dean's office in the college or school of your interest.

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

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

## **Fayetteville, Arkansas**

Published one time each summer by University Relations and the Office of Academic Affairs.

Volume 103

Print Date: June 2009

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Students who enter a college within the University of Arkansas in the academic year of this catalog generally may expect to follow the graduation requirements set forth by that college in this catalog. Because the faculty of each college reserves the right to change graduation requirements, students should meet with their college advisers regularly to be certain that they are aware of any changes in graduation requirements that may apply to them.

Acceptance of registration by the University of Arkansas and admission to any educational program of the University does not constitute a contract or warranty that the University will continue indefinitely to offer the program in which a student is enrolled. The University expressly reserves the right to change, phase out, or discontinue any program.

The listing of courses contained in any University bulletin, catalog, or schedule is by way of announcement only and shall not be regarded as an offer of contract. The University expressly reserves the right to 1) add or delete courses or programs from its offerings, 2) change times or locations of courses or programs, 3) change academic calendars without notice, 4) cancel any course for insufficient registrations, or 5) revise or change rules, charges, fees, schedules, courses, requirements for degrees and any other policy or regulation affecting students, including, but not limited to, evaluation standards, whenever the same is considered to be in the best interests of the University of Arkansas.

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# 2009 Academic Calendar

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## Summer Session I, 2009 - First Six Weeks (29 Class Days)

May 18	Classes begin
May 19	Last day to register, add a course, or change from audit to credit
May 21	Last day to drop without a mark of "W" or change from credit to audit
May 25	Memorial Day Holiday
June 15	Last day to drop a Session I class
June 26	Last day to officially withdraw from Session I
June 26	Last day of classes for Session I

## Summer Session II 2009 - Second Six Weeks (29 Class Days)

June 29	Classes begin
June 30	Last day to register, add a course, or change from audit to credit
July 2	Last day to drop without a mark of "W" or change from credit to audit
July 3	Independence Day Holiday
July 27	Last day to drop a Session II class
August 7	Last day to officially withdraw from Session II
August 7	Last day of classes for Session II

## Summer Session III 2009 - Twelve Weeks (58 Class Days)

May 18	Classes begin
May 21	Last day to register, add a course, or change from audit to credit
May 25	Memorial Day Holiday
May 28	Last day to drop without a mark of "W" or change from credit to audit
July 3	Independence Day Holiday
July 14	Last day to drop a Session III class
August 7	Last day to officially withdraw from Session III
August 7	Last day of classes for Session III

## Summer Session IV 2009 - Ten Weeks (49 Class Days)

June 1	Classes begin
June 3	Last day to register, add a course, or change from audit to credit
June 9	Last day to drop without a mark of "W" or change from credit to audit
July 3	Independence Day Holiday
July 16	Last day to drop a Session IV class
August 7	Last day to officially withdraw from Session IV
August 7	Last day of classes for Session IV

## Summer Session V 2009 - First Five Weeks (24 Class Days)

June 1	Classes begin
June 2	Last day to register, add a course, or change from audit to credit
June 3	Last day to drop without a mark of "W" or change from credit to audit
June 23	Last day to drop a Session V class
July 2	Last day to officially withdraw from Session V
July 2	Last day of classes for Session V
July 3	Independence Day Holiday

## Summer Session VI 2009 - Second Five Weeks (25 Class Days)

July 6	Classes begin
July 7	Last day to register, add a course, or change from audit to credit
July 8	Last day to drop without a mark of "W" or change from credit to audit
July 28	Last day to drop a Session VI class
August 7	Last day to officially withdraw from Session VI
August 7	Last day of classes for Session VI

## Fall 2009 (74 Class Days; 44 MWF, 30 TT)

August 24	Classes begin
August 28	Last day to register, add a course, or change from audit to credit
September 4	Last day to drop without a mark of "W" or change from credit to audit
September 7	Labor Day Holiday
October 30	Last day to drop a fall semester class
November 2-13	Priority Registration for Spring 2009
November 25	Fall Break (administrative offices will be open.)
November 26-27	Thanksgiving Holiday
December 8	Last day to officially withdraw from all classes
December 8	Last day of classes for fall semester
December 9	Dead Day
December 10-16	Final exams

# 2010 Academic Calendar

## Spring 2010 (73 Class Days; 43 MWF, 30 TT)

January 11	Classes begin
January 15	Last day to register, add a course, or change from audit to credit
January 18	Martin Luther King Day
January 25	Last day to drop without a mark of "W" or change from credit to audit
March 19	Last day to drop a spring semester class
March 22-26	Spring Break Week
April 29	Last day to officially withdraw from all classes
April 29	Last day of classes for spring semester
April 30	Dead Day
May 1-7	Final exams
May 8	All University Commencement
May 15	Law School Commencement

## Summer Session I, 2010 - First Six Weeks (29 Class Days)

May 17	Classes begin
May 31	Memorial Day Holiday
June 25	Last day of classes for Session I

## Summer Session II 2010 - Second Six Weeks (29 Class Days)

June 28	Classes begin
July 5	Independence Day Holiday
August 6	Last day of classes for Session II

## Summer Session III 2010 - Twelve Weeks (58 Class Days)

May 17	Classes begin
May 31	Memorial Day Holiday
July 5	Independence Day Holiday
August 6	Last day of classes for Session III

## Summer Session IV 2010 - Ten Weeks (49 Class Days)

June 1	Classes begin
July 5	Independence Day Holiday
August 6	Last day of classes for Session IV

## Summer Session V 2010 - First Five Weeks (24 Class Days)

June 1	Classes begin
July 2	Last day of classes for Session V
July 5	Independence Day Holiday

## Summer Session VI 2010 - Second Five Weeks (25 Class Days)

July 6	Classes begin
August 6	Last day of classes for Session VI

## Fall 2010 (74 Class Days; 44 MWF, 30 TT)

August 23	Classes begin
September 6	Labor Day Holiday
November 24	Fall Break (administrative offices will be open)
November 25-26	Thanksgiving Holiday
December 7	Last Day of Classes
December 8	Dead Day
December 9-15	Final Exams

MAY 2009							JANUARY 2010						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
					1	2	3	4	5	6	7	8	9
3	4	5	6	7	8	9	10	11	12	13	14	15	16
10	11	12	13	14	15	16	17	18	19	20	21	22	23
17	18	19	20	21	22	23	24/31	25	26	27	28	29	30
24/31	25	26	27	28	29	30							
JUNE 2009							FEBRUARY 2010						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6		1	2	3	4	5	6	
7	8	9	10	11	12	13	7	8	9	10	11	12	13
14	15	16	17	18	19	20	14	15	16	17	18	19	20
21	22	23	24	25	26	27	21	22	23	24	25	26	27
28	29	30					28						
JULY 2009							MARCH 2010						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
			1	2	3	4	1	2	3	4	5	6	
5	6	7	8	9	10	11	7	8	9	10	11	12	13
12	13	14	15	16	17	18	14	15	16	17	18	19	20
19	20	21	22	23	24	25	21	22	23	24	25	26	27
26	27	28	29	30	31		28	29	30	31			
AUGUST 2009							APRIL 2010						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1	4	5	6	7	8	9	10
2	3	4	5	6	7	8	11	12	13	14	15	16	17
9	10	11	12	13	14	15	18	19	20	21	22	23	24
16	17	18	19	20	21	22	25	26	27	28	29	30	
23/30	24/31	25	26	27	28	29							
SEPTEMBER 2009							MAY 2010						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
6	7	8	9	10	11	12	2	3	4	5	6	7	8
13	14	15	16	17	18	19	9	10	11	12	13	14	15
20	21	22	23	24	25	26	16	17	18	19	20	21	22
27	28	29	30				23/30	24/31	25	26	27	28	29
OCTOBER 2009							JUNE 2010						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1	6	7	8	9	10	11	12
4	5	6	7	8	9	10	13	14	15	16	17	18	19
11	12	13	14	15	16	17	20	21	22	23	24	25	26
18	19	20	21	22	23	24	27	28	29	30			
25	26	27	28	29	30	31							
NOVEMBER 2009							JULY 2010						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	4	5	6	7	8	9	10
8	9	10	11	12	13	14	11	12	13	14	15	16	17
15	16	17	18	19	20	21	18	19	20	21	22	23	24
22	23	24	25	26	27	28	25	26	27	28	29	30	31
29	30												
DECEMBER 2009							AUGUST 2010						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1	1	2	3	4	5	6	7
6	7	8	9	10	11	12	8	9	10	11	12	13	14
13	14	15	16	17	18	19	15	16	17	18	19	20	21
20	21	22	23	24	25	26	22	23	24	25	26	27	28
27	28	29	30	31			29	30	31				



# UNIVERSITY OF ARKANSAS Board of Trustees

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Term Expires 2010



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Term Expires 2018



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Fayetteville  
Term Expires 2019

# Administrative Officers

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## SYSTEM ADMINISTRATION

President, University of Arkansas B. Alan Sugg, B.S.B.A., M.Ed., Ph.D.

## CHANCELLOR AND VICE CHANCELLORS

Chancellor, University of Arkansas, Fayetteville	G. David Gearhart, B.A., J.D., Ed.D.
Provost and Vice Chancellor for Academic Affairs	Sharon L. Gaber, B.A., M.Pl., Ph.D.
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## DEANS

Dean of Students	Daniel J. Pugh, B.S., M.S., Ph.D.
Dean of Honors College	Bob McMath, B.A., M.A., Ph.D.
Dean of Dale Bumpers College of Agricultural, Food and Life Sciences	Lalit Verma, B.Tech., M.S., Ph.D., interim
Dean of Fay Jones School of Architecture	Graham F. Shannon, B.A., B.Arch., M.Arch.
Dean of J. William Fulbright College of Arts and Sciences	William Schwab, B.A., M.A., Ph.D., interim
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Dean of School of Law	Cynthia Nance, B.S., M.A., J.D.
Dean of Graduate School	Collis R. Geren, B.S., M.S., Ph.D.
Dean of University Libraries	Carolyn Henderson Allen, B.S., M.S.

# Message from the Chancellor

---

Congratulations on your decision to study at the University of Arkansas. You've made a superb choice. If a world-class education is what you are seeking, then there probably has never been a better time in our 138-year history to study here. The spectacular success of the Campaign for the Twenty-First Century has allowed us to provide you with fantastic new educational, recreational, and residential facilities to accommodate the needs of today's student. The 132 newly endowed faculty positions created by the campaign also have allowed us to both retain and attract some of the best teachers, scholars, and researchers found anywhere in the world. More importantly, the 1,738 new student scholarship and fellowship funds created by the campaign have allowed us to attract some of the most academically accomplished students we have ever had. The nation's top students are now choosing the University of Arkansas in record numbers.

So pat yourself on the back. You're part of our university's trend toward excellence. I hope you're as happy to be here as we are to have you. Our top priority at the University of Arkansas is putting you, the student, first. This means providing cutting edge curriculum that is relevant to current needs. This means reducing bureaucratic roadblocks and red tape, and doing everything we can to keep tuition and fee increases to an absolute minimum. We want you to have not only a great education, but a great experience, one you will value for the rest of your life.

I invite you to use this catalog of the University of Arkansas and become better acquainted with who we are and where we're going. On behalf of the university community, we wish you all the best, and we hope this catalog encourages you to take advantage of the lifetime of opportunities awaiting you at the University of Arkansas.

Sincerely,



G. David Gearhart  
Chancellor

# University Profile

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## Vision

The University of Arkansas is a nationally competitive, student-centered research university serving Arkansas and the world.

## History

Founded as a land-grant college and state university in 1871, the University of Arkansas opened its doors to students on January 22, 1872. Under the Morrill Land-Grant College Act of 1862, federal land sales provided funds for the new university, which was charged with teaching “agricultural and the mechanic arts,” “scientific and classical studies,” and “military tactics” to Arkansas scholars.

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

There were few facilities and little money that first academic year, but the eight students and three faculty members who gathered for classes in 1872 showed the same dedication to learning and commitment to excellence that has carried the University of Arkansas into the 21st century. Over the past 137 years, the University has developed into a mature institution with nine schools and colleges, more than 800 faculty members, and 18,648 students. It serves as the major provider of graduate-level instruction in Arkansas. The research and scholarly endeavors of its faculty make it an economic and cultural engine for the state. And its public service activities reach every county in Arkansas, throughout the nation, and around the world.

## Mission

As a land-grant university, the University of Arkansas strives to fulfill a three-fold mission of teaching, research, and service. In addition, as the flagship campus of the University of Arkansas System, the University of Arkansas in Fayetteville serves as the state’s major center of liberal and professional education and as Arkansas’ main source of theoretical and applied research.

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

The University of Arkansas houses more than 200 academic programs and offers 87 bachelor’s degrees in 74 fields of study. Students may also pursue a wide range of graduate degrees, including the Master’s, the Educational Spe-

cialist, the Doctor of Education, and the Doctor of Philosophy. Information about graduate programs can be found in the Graduate School Catalog or on the World Wide Web at <http://www.uark.edu/depts/gradinfo/>.

The Carnegie Foundation categorizes the University of Arkansas as a research institution with “high research activity,” placing the University among the top 10 percent of universities nationwide and in a class by itself within the state of Arkansas. In its 2007 edition, *U.S. News and World Report* ranked the University among the top tier of institutions of higher education. Faculty members perform cutting-edge research for which they annually win prestigious grants and awards, and the University encourages undergraduates to participate in the research process. Such opportunities enhance the learning process by providing hands-on experience in lab and research techniques, by developing students’ abilities to implement, experiment, discover and teach, and by fostering a mentoring relationship early in students’ academic careers.

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

## Location

Fayetteville, a thriving city of 65,000 in the northwest corner of the state, is home to the University of Arkansas campus, which comprises 345 acres and 133 buildings. Lying on the western edge of the Ozark Mountains, the city boasts a lively cultural scene and easy access to outdoor recreation. In 2003, *Outside* magazine named Fayetteville 23rd out of the top 40 college towns in America. Fayetteville was heralded as one of *Business Week’s* 2002 “Dazzling Dozen” small cities in the U.S. Northwest Arkansas is the sixth-fastest-growing region in the nation, according to the U.S. Census, and was recently included among the top four “Best Places for Work” by CNN/Money. Fayetteville’s temperate climate ensures beautiful seasons year-round. The city is central to larger metropolitan areas, including Dallas, Kansas City, Little Rock, Memphis, St. Louis, and Tulsa, and has direct flights from Los Angeles, New York City, Chicago, Washington, and Atlanta, among other cities.

# Undergraduate Fields of Study

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The academic units of the University of Arkansas, Fayetteville, include nine colleges and schools and two military departments: the Dale Bumpers College of Agricultural, Food and Life Sciences, which includes the School of Human Environmental Sciences; the Fay Jones School of Architecture; the J. William Fulbright College of Arts and Sciences, which includes the School of Social Work; the Sam M. Walton College of Business; the College of Education and Health Professions, which includes the Eleanor Mann School of Nursing; the College of Engineering; the School of Law; the Graduate School; the Honors College; and the Departments of Army and Air Force ROTC. In addition, the Division of Continuing Education offers non-credit course work, correspondence courses for credit, and off-campus credit courses in cooperation with colleges and schools at Fayetteville.

The School of Law and the Graduate School offer professional and graduate degrees.

## FIELDS OF STUDY BY COLLEGE AND SCHOOL

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Following is a list of major fields of undergraduate study offered at the University of Arkansas, followed by a list of minors.

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

- Agricultural Business
- Agricultural Education, Communication and Technology
- Animal Science
- Biological Engineering (joint program with the College of Engineering)
- Crop Management
- Environmental, Soil, and Water Science
- Food Science
- Horticulture, Landscape and Turf Sciences
- Poultry Science

### **School of Human Environmental Sciences**

- Apparel Studies
- Foods, Human Nutrition, and Hospitality
- General Human Environmental Sciences
- Human Development, Family Sciences, and Rural Sociology
- Interior Design

### **Fay Jones School of Architecture**

- Architecture
- Architectural Studies
- Landscape Architecture
- Landscape Architectural Studies

### **J. William Fulbright College of Arts and Sciences**

- American Studies
- Anthropology
- Art
- Biology
- Chemistry
- Classical Studies
- Communication
- Computer Science (B.A.)
- Criminal Justice
- Drama
- Earth Science
- Economics (B.A.)
- English
- French
- Geography
- Geology
- German
- History
- International Relations
- Journalism
- Mathematics
- Medical Sciences
- Music
- Philosophy
- Physics
- Political Science
- Psychology
- Social Work
- Sociology
- Spanish

### **Second (or dependent) Majors\***

- African American Studies
- Asian Studies
- European Studies
- Latin American and Latino Studies
- Middle East Studies
- Russian Studies

\*A student may pursue a second (or dependent) major if he or she is already pursuing a first major authorized to be given independently.

### **Sam M. Walton College of Business**

- Accounting
- Business Economics

Finance  
 General Business  
 Information Systems  
 International Business  
 Management  
 Marketing  
 Transportation and Logistics

### College of Education and Health Professions

Career and Technical Education  
 Childhood Education  
 Communication Disorders  
 Elementary Education  
 Health Science  
 Human Resource Development  
 Kinesiology  
 Nursing  
 Recreation

### College of Engineering

Biological Engineering  
 Chemical Engineering  
 Civil Engineering  
 Computer Engineering  
 Computer Science (B.S.)  
 Electrical Engineering  
 Industrial Engineering  
 Mechanical Engineering

### Undeclared Major

Certain degree-seeking students who are temporarily undecided about their choice of a major field of study may select the undeclared major. However, all undergraduate students still must enroll in one of the colleges or schools. Each of these academic units makes provisions for undeclared majors and each has its own rules for the point at which a student must declare a major.

### Minors

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

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

Agricultural Business  
 Agricultural Communications  
 Agricultural Education  
 Agricultural Systems Technology Management  
 Animal Science  
 Crop Biotechnology  
 Crop Management  
 Entomology  
 Environmental, Soil, and Water Science  
 Equine Science  
 Food Science  
 Human Development and Family Sciences  
 General Foods and Nutrition

Global Agricultural, Food and Life Sciences  
 Horticulture  
 Interior Design  
 Journalism  
 Landscape Horticulture  
 Pest Management  
 Plant Pathology  
 Poultry Science  
 Turf Management  
 Wildlife Habitat  
 Minors offered by the J. William Fulbright College of Arts and Sciences  
 Minors offered by the Sam M. Walton College of Business

### Fay Jones School of Architecture

Minors offered by any other UA college or school

### J. William Fulbright College of Arts and Sciences

African American Studies  
 Anthropology  
 Arabic  
 Art History  
 Asian Studies  
 Biology  
 Business  
 Chemistry  
 Classical Studies  
 Communication  
 Computer Science  
 Drama  
 Economics  
 English  
 European Studies  
 French  
 Gender Studies  
 Geography  
 Geology  
 German  
 Historic Preservation  
 History  
 Japanese  
 Latin American and Latino Studies  
 Legal Studies  
 Mathematics  
 Medieval and Renaissance Studies  
 Middle East Studies  
 Music  
 Philosophy  
 Physics  
 Political Science  
 Psychology  
 Religious Studies  
 Social Work  
 Sociology  
 Spanish  
 Statistics

### Sam M. Walton College of Business

Accounting  
 Banking/Financial Management/Investment  
 Business Economics

Enterprise Resource Planning  
Finance  
Financial Economics  
Information Systems  
Insurance/Real Estate  
Management  
Marketing  
Transportation  
Minors offered by the J. William Fulbright College of Arts and Sciences

### **College of Education and Health Professions**

Recreation  
Minors offered by any other UA college or school

### **College of Engineering**

Minors offered by any other UA college or school

### **Graduate School**

Microelectronics-Photonics

## **PRE-PROFESSIONAL PROGRAMS**

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### **Pre-Law**

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

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

### **Other Pre-Professional Programs**

Fulbright College offers pre-professional programs and advisers in law, medicine, dentistry, optometry, medical technology, chiropractic, physical therapy, pharmacy, dental hygiene, occupational therapy, social work, and theology. The Dale Bumpers College of Agricultural, Food and Life Sciences coordinates the pre-veterinary medicine program.

## **ACCREDITATIONS**

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The University of Arkansas, Fayetteville, is accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools, available at (312) 263-0456, at <http://www.ncahigherlearningcommission.org/> or by mail at 30 North LaSalle Street, Suite 2400, Chicago, IL 60602. Some colleges and programs are also accredited by other agencies, associations, or professional organizations, including those listed below.

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

The Bachelor of Science in Human Environmental Sciences (B.S.H.E.S.) degree programs are accredited by the Council for Professional Development of the American Association of Family and Consumer Sciences. The degree program in dietetics is accredited by the Commission on Accreditation for Dietetic Education of the American Dietetics Association. The Bachelor of

Interior Design (B.I.D.) degree is accredited by the Council for Interior Design Accreditation (CIDA). The Nursery School and the Infant Development Center in the School of Human Environmental Sciences are accredited by the National Association for the Education of Young Children (NAEYC). The Bachelor of Science in Agricultural, Food and Life Sciences (B.S.A.) in food science is accredited by the Institute of Food Technologists. Teacher education programs in agriculture and family and consumer sciences are coordinated with educational programs in the College of Education and Health Professions and are accredited by the National Council for Accreditation of Teacher Education (NCATE).

### **Fay Jones School of Architecture**

The Bachelor of Architecture (B.Arch.) program is accredited by the National Architectural Accreditation Board, and the Bachelor of Landscape Architecture (B. Landscape Arch.) program is accredited by the Landscape Architectural Accreditation Board of the American Society of Landscape Architects.

### **J. William Fulbright College of Arts and Sciences**

The Bachelor of Science (B.S.) degree program in chemistry is accredited by the American Chemical Society. The American Council on Education in Journalism and Mass Communications has accredited the Bachelor of Arts (B.A.) degree program in journalism. The degree programs in the Department of Music are accredited by the National Association of Schools of Music. The Doctor of Philosophy (Ph.D.) degree program in psychology is accredited by the American Psychological Association. The Bachelor of Social Work (B.S.W.) and the Master of Social Work degree programs are accredited by the Council of Social Work Education.

### **Sam M. Walton College of Business**

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

### **College of Education and Health Professions**

The teacher education programs in the College of Education and Health Professions are accredited by the National Council for Accreditation of Teacher Education. The M.A.T. program in childhood education is in compliance with the standards of the National Association for the Education of Young Children. The various M.A.T. licensure programs in secondary education are in compliance with the standards of the specialty organizations including National Council of Teachers of English, National Council of Teachers of Mathematics, National Science Teachers Association, and National Council for the Social Studies. The Master of Science degree program in speech pathology-audiology is accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association. The Bachelor of Science in Nursing (B.S.N.) degree program is accredited by the National League for Nursing Accrediting Commission (61 Broadway Street, New York, NY 10006, 212-363-5555, Ext. 153) and is approved by the Arkansas State Board of Nursing. The Bachelor of Science in Education (B.S.E.) degree program in health science, kinesiology, recreation, and dance is accredited by the Council on Accreditation of the National Recreation and Park Association. The Master of Science degree

in rehabilitation counseling is accredited by the Council on Rehabilitation Education.

### College of Engineering

The College of Engineering offers the following programs accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone (410) 347-7700: Bachelor of Science in Biological Engineering (B.S.B.E.), Bachelor of Science in Chemical Engineering (B.S.Ch.E.), Bachelor of Science in Civil Engineering (B.S.C.E.), Bachelor of Science in Computer Engineering (B.S.Cmp.E.), Bachelor of Science in Electrical Engineering (B.S.E.E.), Bachelor of Science in Industrial Engineering (B.S.I.E.), Bachelor of Science in Mechanical Engineering (B.S.M.E.), and Master of Science in Environmental Engineering (M.S.En.E.).

The College of Engineering offers the following program accredited by the Computing Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone (410) 347-7700: Bachelor of Science in Computer Science (B.S.).

### School of Law

The degree programs in the School of Law on the Fayetteville campus are accredited by both the American Bar Association and the Association of American Law Schools.

## SPECIAL PROGRAMS AND OPPORTUNITIES

### Honors Studies

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

The honors program in the **Bumpers College of Agricultural, Food and Life Sciences** provides students with opportunities for intellectual enrichment beyond the traditional undergraduate experience. This is accomplished through special honors courses, completion of an undergraduate honors thesis and other significant activities including interactions with students in honors programs in other colleges. The results of the student's original research or creative project are published in *Discovery*, the college undergraduate research journal. In support of these efforts, participants in the Honors Program are eligible to receive an honors stipend in support of their research projects. The transcript and diploma of each honors graduate will designate the student as an honors graduate of the college. At the college commencement ceremony, each honors graduate will wear special regalia and have the title of their honors thesis and their mentors' names listed in the graduation program. Students must maintain a grade-point average of 3.25 to remain in the program. Students who do not participate in the program may also graduate with honors designation. For additional information, see the Bumpers College section of this catalog.

The Departments of Architecture and Landscape Architecture in the **Fay Jones School of Architecture** provide opportunities for students of superior academic and creative ability to enhance and enrich their professional and liberal education by participating in the School's honors programs. Please contact the School's Academic Advising Center for specific requirements.

To create an intellectual environment that will challenge the best of students, the **J. William Fulbright College of Arts and Sciences** provides a comprehensive program of honor studies. From the first year to the senior year, an honors student is provided the opportunity to study with other superior students in small distinctive classes taught by highly motivated and skilled faculty members. There are also opportunities for independent study so that students learn to work on their own and to develop their abilities and interests

in ways that are not normally possible in regular college course work. Students participating in a program of honors studies also receive special academic counseling to satisfy their future career objectives. Students are offered every opportunity to achieve a high level of intellectual maturity and accomplishment. For additional information, see the Fulbright College section of this catalog.

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

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

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

### Campuswide Academic Honor Societies

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

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

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

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

**Phi Kappa Phi** is a national honor society whose primary objective is



the recognition and encouragement of superior scholarship in all academic disciplines. Junior and senior undergraduate students who have a minimum GPA of 3.85 are eligible for membership. Also eligible are graduate students, registered for one year, who have a minimum GPA of 3.85.

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

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

### Campuswide Leadership Honor Societies

**Blue Key** is a service-oriented honor fraternity that recognizes outstanding scholarship, leadership and involvement in campus activities. Applicants must be classified as juniors and meet a minimum GPA of 2.75 for membership consideration.

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

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

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

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

### Graduate and Professional Study

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

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

### Reserve Officer Training Corps

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

cal activities and summer orientation programs are enhanced with continually updated curriculums. Classes are taught by military personnel, ensuring realistic perspectives on the military professions.

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

### Cooperative Education Program

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

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

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

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

### Study Abroad

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

For more information about study, work, and travel abroad, contact the Office of Study Abroad, a division of Fulbright College, 722 W. Maple, 479-575-7582. Students in the Bumpers College of Agricultural, Food and Life Sciences may contact International Agricultural Programs, 307 Hotz Hall, 479-575-6727. Students in the Walton College of Business may contact the Undergraduate Programs Office at 479-575-4622.

# Admission

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## UNDERGRADUATE ADMISSION

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

For students with disabilities, the University offers a variety of services to those students with physical or learning disabilities through our Center for Educational Access. Students with any type of physical or learning disability are strongly encouraged to contact that office in Room 104 in the Arkansas Union, or call 479-575-3104 (TDD/Voice) to learn more about the specific nature of their services and the overall accessibility of the University.

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

Office of Admissions  
232 Silas H. Hunt Hall  
1 University of Arkansas  
Fayetteville, AR 72701  
Telephone: 479-575-5346 or 1-800-377-8632  
<http://admissions.uark.edu/>

### When to Apply

Students interested in applying to the University of Arkansas for the fall semester are urged to apply by the November 15 preferential deadline. Early admittees are given priority when applying for new student orientation and university housing. The preferential application deadline for the spring term is November 1. To be considered for freshman scholarships, the completed admission application, all required transcripts, test scores and application fee must be received by the Office of Admissions by February 1. The scholarship application deadline is also February 1.

### Deadlines for Admission Consideration

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

Fall – August 1  
Spring – December 20

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

International students should refer to “Admission of International Students” in this chapter for application deadlines, procedures, and requirements.

### How to Apply

1. **Submit a completed application for undergraduate admission and a \$40 non-refundable application fee to the Office of Admissions.** You may apply for admission on the World Wide Web at <http://apply.uark.edu>.
2. **Request that all required transcripts be sent to the Office of Admissions.** Only official transcripts will be accepted. Transcripts are not considered official unless submitted in a sealed, stamped envelope, or sent via Electronic Data Interchange from the previous institution. Questionable or unreadable transcripts may be refused.

**High school transcripts are required of all entering freshmen and transfer students with fewer than 24 transferable semester hours.** A preliminary admission will be provided to high school seniors on the basis of sixth- or seventh-semester transcripts.

**College transcripts must be provided from each college or university attended.** Transcripts must be sent directly to the Office of Admissions from each institution attended or submitted in an official sealed school envelope, or sent via Electronic Data Exchange.

3. **All new freshmen and transfer students with fewer than 24 transferable credit hours must submit ACT or SAT test scores. Non-traditional students applying three or more years after high school graduation have the option of submitting the ACT COMPASS to satisfy testing requirements. The University will not accept test scores taken more than five years prior to enrollment.** Test scores should be sent directly to the University by the testing agency. The University’s institutional codes are: ACT-0144; SAT-6866.
4. **All students born after January 1, 1957, must submit immunization health records to the Pat Walker Health Center after admission.** Immunization proof is required prior to first registration. See <http://health.uark.edu/forms/ImmunizationCompliance.pdf>.
5. **English Proficiency:** Applicants whose native language is not English must submit a Test of English as a Foreign Language (TOEFL) score of at least 550 (paper based), 79 (internet based), or a minimum score of 6.5 on the IELTS (writing) taken within the preceding two years. Students who have completed grades 10-12 at a U.S. accredited high school and have a satisfactory ACT English subscore may request a review for waiver of this requirement. Students transferring from an accredited U.S. institution (or institution in a country where English is the native language) with at least 24 transferable credit hours and successful completion of

English Composition I and II with a grade of “C” or above will not be required to submit the TOEFL or IELTS for admission consideration. For more information about the TOEFL, you may write to TOEFL Services, ETS, PO Box 899, Princeton, New Jersey 08541 or visit the World Wide Web at <http://www.TOEFL.org/>.

6. **The University shall admit only those applicants whose enrollment will not be detrimental to the quality of life and the educational programs of the University.** The Faculty Committee on Admissions and Transfer of Credit has authority to interpret University admission or transfer policy and to grant a variance. The Third Level Admission Committee has the final authority in admission and transfer policy. An applicant who has withheld pertinent information regarding educational background or who has falsified information or credentials may be denied admission to the University or, if enrolled, may be immediately withdrawn.

## ADMISSION OF ENTERING FRESHMEN, ACADEMIC YEAR 2009-10

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

**English** 4 units

**Mathematics** 4 units

(Units must be of equivalent or higher level than Algebra I)

**Social Studies** 3 units

**Natural Sciences** 3 units

**1 unit general sciences – 2 units lab sciences**

(Choose two courses from biology, chemistry, and physics laboratory. Two years of principles of technology will meet one unit of natural sciences [physics]. Two years of applied biology/chemistry will meet one unit of natural sciences [biology].)

**Electives** 2 units

(To be chosen from English, foreign languages, oral communication, mathematics, computer science, natural sciences, and social studies.) As you choose your electives, residents of Arkansas please remember that to be eligible for Arkansas Department of Higher Education scholarships (i.e. Governor’s or Challenge) students must also have 2 years of the same foreign language.

**Total** 16 units

Students who have taken these course requirements and who have a high school overall GPA of at least a 3.00 and an ACT of 20 (or SAT of 930 combined critical reading and math) or better meet the general admission requirements. Students not meeting these criteria are still encouraged to apply and will be reviewed for possible admission by the Third Level Admission Committee.

### Accelerated Admission

Superior high school students who have completed a rigorous college preparatory curriculum may seek admission to the freshman class at the end of their junior year of high school. Applicants for accelerated admission are required to complete certain required subjects during three years of high school

study, to submit letters of recommendation, and to submit an ACT or SAT score equivalent to at least the 90th percentile of the University’s previous entering class. Additional information and application materials may be obtained by visiting or calling the Office of Admissions at 1-800-377-8632 or online at <http://admissions.uark.edu>.

## ADMISSION OF TRANSFER STUDENTS

### Transfer Admission Requirements

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

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

Students who have completed fewer than 24 transferable semester hours must, in addition to the above requirements, meet all requirements for freshman admission (see Admission of Entering Freshmen). Test scores and transcripts are also evaluated to determine whether State of Arkansas requirements for developmental course placement have been met. (See page 27.) For policies regarding transfer of credit from other institutions, see page 43.

## ADMISSION OF SPECIAL (NON-DEGREE SEEKING) STUDENTS

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

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

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

Special students must meet course prerequisites and should be prepared to verify to the department by official documentation that University course prerequisites have been met, if appropriate. Students planning to enroll in any upper-division education courses should verify admission to the Teacher

Education Program prior to registration. A special student may not enroll for more than nine hours of courses in a term without approval of the student's academic dean. No more than 24 semester hours earned while in a non-degree seeking status will apply to a degree at the University.

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

### When to Apply

Special students must meet the same application deadlines as other students with the exception of students participating in the senior citizens' registration. For further information consult the online schedule of classes [www.uark.edu/classes/](http://www.uark.edu/classes/).

### How to Apply

The following students may be considered for special status:

1. Visiting students who attend other colleges or universities and wish to enroll at the University to earn credits that they plan to transfer back to their home institution. It is the student's responsibility to verify with his or her college that courses taken here will be acceptable as transfer credit.

**Application procedure:** Submit a completed application, a non-refundable application fee, and a letter of good standing verifying eligibility to return to the home institution.

2. Students who want to take courses of special interest for personal or professional development but who are not interested in working toward a degree. They are considered non-degree seeking. Applicants in this category are normally expected to have been out of high school for five or more years.

**Application procedure:** Submit a completed application and non-refundable application fee. Students who have been out of high school less than five years should submit a transcript and test scores verifying that admission requirements have been met.

The application fee is not required for residents of Arkansas who are 60 years and older and wish to participate in the senior tuition waiver program.

3. Students who already have a college degree and who want to take credit classes but not toward another degree at this time. They are considered non-degree seeking. Credits earned under this classification will not count toward a graduate degree.

**Application procedure:** Submit a completed application and non-refundable application fee. Students who wish to enroll for successive terms should submit a transcript showing the degree.

4. Dually enrolled high school students must have at least a 20 ACT score and a 3.00 high school GPA to enroll. Dually enrolled high school students are ineligible to enroll in remedial courses.

**Application procedure:** Submit a completed application, a non-refundable application fee, ACT or SAT scores, high school transcript, letter of intent regarding courses student wishes to enroll, and a letter of recommendation from the high school principal or counselor. Admissions applications should be submitted at least one month in advance of the term.

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

## READMISSION OF RETURNING UA STUDENTS

Any former student who wishes to return to the University after missing a fall or spring semester should complete an application for admission. Students enrolled in UA correspondence courses during their absence must be readmitted. A \$40 non-refundable application fee is required for former students.

### When to Apply

An early readmission will enable a student to register during priority registration. The student should submit an application and all appropriate credentials at least one month prior to the time of registration. Registration dates and procedures are found on the schedule of classes on the Internet at <http://www.uark.edu/classes/>.

### Deadlines for Admission Consideration

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

Fall – August 1

Spring – December 20

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

### Requirements

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

## ADMISSION OF INTERNATIONAL STUDENTS

All international students must present officially certified academic credentials, evidence of adequate financial support, and, for non-native English speakers only, a minimum TOEFL score of 550 (paper based), 79 (Internet based), or a minimum score of 6.5 on the IELTS, taken within the preceding two years. Students who have completed grades 10-12 at a U.S. accredited high school and have a satisfactory ACT English subscore may request a review for waiver of this requirement. Students transferring from an accredited U.S. institution (or institution in a county where English is the native language) with at least 24 transferable credit hours and completion of English Composition I and II with a grade of “C” or above will not be required to submit the TOEFL or IELTS for admission consideration.

Applicants who meet the academic and financial requirements but who do not meet the English proficiency requirement of the University will be offered conditional admission to attend an intensive English program through the Spring International Language Center. Students will be eligible to enroll in University of Arkansas academic courses upon successful completion of the highest level of the intensive English program with a 3.00 grade average and recommendation of the director of Spring International.

An entering freshman who has completed secondary school at either U.S. or foreign institutions must have a) the equivalent of a final cumulative grade-point average of at least 2.75 and b) competency equivalent to that developed by taking four years of English and three years each of mathematics, natural sciences, and social studies, and an additional three units of electives chosen from English, speech, foreign languages, mathematics, natural sciences, or social studies in U.S. high schools.

A student transferring with fewer than 24 semester hours of post-secondary work at either U.S. or foreign institutions must a) have a cumulative grade-point average of at least a 2.50 (or its equivalent) on all post-secondary work attempted, and b) meet the requirements specified for entering freshmen. A student transferring from either a U.S. or foreign post-secondary institution with at least 24 semester hours must have the equivalent of a cumulative grade-point average of at least 2.50 on all post-secondary course work attempted.

A non-refundable application fee of \$50 is required for all international applicants. All applications and supporting documents must be submitted by May 31 for the fall semester; October 31 for the spring semester; and March 1 for the summer sessions.

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

For specific admission requirements and application materials pertaining to students on F-1, J-1, or any non-immigrant visas, applicants should write directly to the International Admission Office, 747 W. Dickson Street, Suite 8, 1 University of Arkansas, Fayetteville, Arkansas 72701, or call 1-479-575-6246 or e-mail [iao@uark.edu](mailto:iao@uark.edu).

Please see the section “Placement and Proficiency Tests” on this page for University policy regarding English language use by non-native speakers.

## ACADEMIC BANKRUPTCY

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

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

## PLACEMENT AND PROFICIENCY TESTS

ACT, SAT and ACT COMPASS scores are used to determine placement in University courses. Students whose scores indicate the need for additional preparation may be placed in courses designed to prepare them for college-level work. (See Arkansas Requirements for Developmental Course Placement on page 27.) Credit earned in such courses does not count toward degrees in all colleges. (See Courses That Do Not Count toward Degrees, page 27.)

### Freshman Composition Placement

- Students with ACT English scores lower than 19, SAT verbal scores lower than 470, or ACT COMPASS writing skills lower than 75 should enroll in the course sequence ENGL 0003, ENGL 1013, and ENGL 1023.

- Students with ACT English scores of 19-27, SAT verbal scores of 480-620, or ACT COMPASS writing skills of 75 or higher should enroll in ENGL 1013 and ENGL 1023.
- Students with ACT English scores of 28-29 or SAT verbal scores of 630-670 may enroll in ENGL 1013 and ENGL 1023 or in Honors English (ENGL 1013H and ENGL 1023H).
- Students with ACT English scores greater than 29 or SAT verbal scores greater than 680 may enroll in Honors English (ENGL 1013H and ENGL 1023H) or elect exemption. Some degree programs require credit in composition, and students should confer with their advisers before exempting.

### The Math Placement Test

This test is offered during new student orientation and is required of new freshmen who have not presented ACT, SAT or COMPASS mathematics scores and of transfer students who have not taken and passed a college-level Calculus I course. Students may opt to take the placement test to improve their placement in mathematics.

### Speech Communication Exemption Examination

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

### Foreign Language Placement Examinations

Students with previous foreign language experience in French, German, or Spanish are encouraged to take language placement examinations offered during summer orientation. Those test scores will be used by academic advisers to determine an appropriate foreign language placement level. Students who omit one or more courses in the basic language sequence will receive credit for omitted courses when they have validated their high placement by passing the course into which they were placed with a "C" or better. Conversation courses (3033, 4033) and correspondence courses may not be used to validate such prior knowledge; and no degree credit (graduation credit) is awarded for a foreign language 1003 course to students in the J. William Fulbright College of Arts and Sciences unless they completed two years of a different language in high school.

### General Chemistry Placement Examinations

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

### English Language Use by Non-Native Speakers

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

1. Undergraduate students who transfer at least 24 hours of credit from U.S. institutions, including courses that meet the freshman composition requirement;

2. Undergraduate students who have completed grades 10 through 12 in and graduated from a U.S. high school and have obtained an ACT English section score of 19 or above or a SAT verbal score of 460.
3. Graduate students who earned bachelors or master's degrees from U.S. institutions or from foreign institutions where the official and native language is English;
4. Undergraduate students with a Test of Written English (TWE) score of 5.0 or iBT writing score of 28 or IELTS writing score of 6.5.
5. Graduate students with a Test of Written English (TWE) score of 5.0 or iBT writing score of 29 or IELTS writing score of 7.0.
6. Graduate students with a GRE Analytical Writing score of 4.5 or GMAT Analytical Score of 4.5.

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

The ELPT is administered by Testing Services during New Student Orientation and there is a \$10.00 charge.

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

## GRADUATE SCHOOL ADMISSION

Applications for admission to the University of Arkansas Graduate School and two official copies of transcripts of the applicant's academic record at each college and university attended since high school graduation must be submitted to the graduate school admissions office and approved in advance of registration. The transcripts will become a part of the student's permanent file at the University. Applications may be obtained by writing to the Graduate and International Admissions Office, 747 W. Dickson Street, Suite 8, 1 University of Arkansas, Fayetteville, AR 72701; by calling 1-479-575-6246; by e-mailing gradinfo@uark.edu; or by applying on the World Wide Web at <http://apply.uark.edu>.

Additional information and procedures for making application to the Graduate School are included in the *Graduate School Catalog*.

### Admission to Graduate Standing

To be admitted to graduate standing, a student must have earned a baccalaureate degree from a regionally accredited U.S. institution or from an institution with substantially equivalent requirements for a baccalaureate degree and must have a grade-point average of 3.0 or better on the last 60.0 credit hours of attempted coursework prior to receiving the baccalaureate degree.

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

Under certain conditions, applicants for admission to the Graduate

School may be required to present satisfactory scores on the graduate record examinations (GRE) or another specified national standard test.

For further information, see the *Graduate School Catalog of Studies* at: <http://catalogofstudies/uark.edu/2691.php>.

## **SCHOOL OF LAW ADMISSION**

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A baccalaureate degree is required for admission to the University of Arkansas School of Law, except for those students in the J. William Fulbright College of Arts and Sciences or in the Dale Bumpers College of Agricultural, Food and Life Sciences who are admitted to the special six-year program. All applicants for admission are required to take the law school admission test. (See page 118 for the Fulbright College Pre-Law Program or page 75 for the Dale Bumpers College of Agricultural, Food and Life Sciences.)

For complete details concerning admission to the University of Arkansas School of Law, see the School of Law Catalog or write to Office of Admissions, Leflar Law Center, University of Arkansas, Fayetteville, AR 72701, telephone 479-575-3102. Applications can be submitted on the World Wide Web at <http://apply.uark.edu/>.

# Financial Aid and Scholarships

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## FINANCIAL AID

The University of Arkansas annually awards over \$100 million of financial aid and scholarships to students. Financial aid is divided into categories of grants, work, loans, and scholarships. Unless otherwise specified, a student needs to complete only two forms to apply for all four basic types of assistance: The Free Application for Federal Student Aid (FAFSA), which analyzes the ability of the student's family to pay for college; and the University's Application for Admission. These forms collect information used by the Office of Financial Aid and the University's scholarship committees in determining awards. In some cases, copies of the parents' and/or student's tax returns are needed.

## DETERMINING FINANCIAL NEED

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

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

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

## APPLICATION PROCEDURE

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

Students hoping to be considered for scholarships need to have their application for admission and a separate application for scholarships submitted by November 15 to the University for priority consideration. However, please check with your department for earlier deadlines and additional forms.

To receive priority consideration for financial aid, all forms and applications need to be submitted by March 1. Students are encouraged to apply even

if they miss this priority date. Funds will be available after the priority date.

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

## SATISFACTORY ACADEMIC PROGRESS

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

### Quantitative Requirements

There are two quantitative requirements that the student must meet to remain eligible to apply for financial assistance. First, the student must pass, at a minimum, 67 percent of the credits attempted while attending the University. Also, the student will remain eligible to apply for aid as long as the number of credits attempted is not more than 150 percent of the number of credits required for the student's degree.

A transfer student may have earned credits at another school that will count toward his or her degree at the University of Arkansas. Only transfer credits that apply to the student's degree will count as part of the 150 percent maximum.

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

### Qualitative Requirements

A student is deemed to have met the qualitative requirements for satisfactory academic progress for financial aid purposes provided the student's academic status is not one of Academic Dismissal.



**Graduate and Law Students**

Satisfactory academic progress for graduate and law students is determined as described above with one exception. In order to meet the quantitative requirement, the student must pass with at least a grade of “C,” at a minimum, 67 percent of the credits attempted while attending the University at the graduate level.

**SCHOLARSHIPS**

The Office of Academic Scholarships is part of the Honors College and is housed in Old Main, Room 101.

The University of Arkansas, Fayetteville, awards over 5,000 scholarships totaling more than \$18 million for students each year. This total does not include funds that support such external scholarships held by UA students as Governor’s Scholarships or Arkansas Academic Challenge Scholarships. Scholarships funded by the University fall into three broad categories: distinguished fellowships, academic scholarships, and special interest/skills scholarships. The scholarship information contained below applies to students entering for the 2009-2010 academic year. Current high school students interested in matriculating for the 2010-2011 academic year are encouraged to consult the Office of Academic Scholarships Web site at <http://scholarships.uark.edu> for the most up-to-date information.

**SCHOLARSHIPS FOR NEW STUDENTS**

**Prestigious Fellowships (See chart below)**

The University of Arkansas offers approximately 90 prestigious Fellowships a year. The fellowships are given in one of four different programs: The Sturgis Fellowship, established in 1985; the Bodenhamer Fellowship, established in 1998; the Boyer Fellowship, established in 2000; and the Honors College Fellowships, established in 2002. The prestigious fellowships are among the most competitive in the nation and are awarded to the top 2 percent of students. Each Fellow receives up to \$50,000 for four years of study. Students who wish to apply or want to see a full list of fellowships should visit the Web site at <http://honorscollege.uark.edu/>.

**Academic Scholarships (See chart on following page)**

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

<b>PRESTIGIOUS UNDERGRADUATE FELLOWSHIPS</b>				
<b>Name</b>	<b>Annual Award</b>	<b>Eligibility Criteria</b>	<b>Application Procedure</b>	<b>Renewal Criteria</b>
<b>Bodenhamer Fellowship</b>	\$12,500 per year and out-of-state differential	32 ACT/1420 SAT, 3.70 GPA National Merit or National Achievement finalists. Exceptional academic performance. Letters of recommendation required.	Requires application for admission along with the fellowship application ( <a href="http://honorscollege.uark.edu">honorscollege.uark.edu</a> ).  <b>Priority Deadline:</b> November 15 (Student Materials) <b>Final Deadline:</b> February 1 (Transcripts and Letters of Recommendation)	Cumulative 3.00 GPA and 30 hours earned by the end of the second semester of each academic year. 4 years or 8 semesters total.
<b>Boyer Fellowship</b>	\$12,500 per year	For majors in the Sam Walton College of Business 3.50 cumulative GPA and 32 ACT/1320 SAT or higher. Arkansas high school graduates demonstrating financial need (FAFSA must be completed prior to selection of recipients) and strong leadership. Letters of recommendation required.	Requires application for admission along with the Boyer Fellowship application. Go to <a href="http://waltoncollege.uark.edu/">http://waltoncollege.uark.edu/</a> for details.  <b>Priority Deadline:</b> November 15 (Student Materials) <b>Final Deadline:</b> February 1 (Transcripts and Letters of Recommendation)	Cumulative 3.00 GPA and 30 hours earned by the end of the second semester of each academic year. 4 years or 8 semesters total.
<b>Honors College Fellowship</b>	\$12,500 per year and out-of-state differential	ACT 32 or 1420 SAT with strong academic performance.	Requires application for admission along with the fellowship application ( <a href="http://honorscollege.uark.edu">honorscollege.uark.edu</a> ).  <b>Priority Deadline:</b> November 15 (Student Materials) <b>Final Deadline:</b> February 1 (Transcripts and Letters of Recommendation)	Cumulative 3.00 GPA and 30 hrs. earned by the end of the 2nd semester of each academic year.
<b>Sturgis Fellowship</b>	\$12,500 per year and out-of-state differential	For majors in Fulbright College of Arts & Sciences. 30 ACT/1320 SAT, 3.70 minimum GPA and exceptional academic performance.	Requires application for admission along with the fellowship application ( <a href="http://honorscollege.uark.edu">honorscollege.uark.edu</a> ).  <b>Priority Deadline:</b> November 15 (Student Materials) <b>Final Deadline:</b> February 1 (Transcripts and Letters of Recommendation)	Cumulative 3.00 GPA and 30 hours earned by the end of the second semester of each academic year. 4 years or 8 semesters total.

## UA Scholarships – General Information

The following regulations govern the general University scholarships described below:

1. **NOVEMBER 15** is the priority scholarship deadline for entering freshmen. An applicant must be admitted to the University by the above mentioned deadline to be considered for these scholarships.
2. An “entering freshman” is defined as a student who has not enrolled in another post-secondary institution in a fall or spring semester following graduation from high school.
3. Eligibility for renewal of Chancellor’s and general University scholarships is determined at the end of the second semester each award year. Students may “catch up” in summer terms by taking classes at their own expense on the Fayetteville campus.
4. These scholarships are generally awarded per academic year to cover

SCHOLARSHIPS				
Name	Annual Award	Eligibility Criteria	Application Procedure	Renewal Criteria
<b>Chancellor’s Merit Scholarship</b>	Up to \$10,000, plus the amount of either a Corporate or a UofA National Merit Scholarship, per year toward the direct cost of education, includes out-of-state tuition differential	National Merit or National Achievement finalists. Exceptional academic performance. Competitively Awarded	Complete Entering Freshmen Scholarship Application ( <a href="http://scholarships.uark.edu">http://scholarships.uark.edu</a> ) <b>Priority Deadline:</b> November 15	Cumulative 3.00 GPA and 30 hours earned by the end of the second semester of each award year. 4 years or 8 semesters total (5 years or 10 semesters for students in Architecture or the M.A.T. program).
<b>Chancellor’s Scholarship</b>	Up to \$8,000 per year toward direct cost of education, including tuition, fees and double-occupancy room and board in UA residence hall or Greek housing.	Applications are competitive and typically come from the top 5 percent of the applicant pool. National Merit Semifinalists and National Achievement Semifinalists are also considered. Competitively Awarded	Complete Entering Freshmen Scholarship Application ( <a href="http://scholarships.uark.edu">http://scholarships.uark.edu</a> ) <b>Priority Deadline:</b> November 15	Criteria same as for Chancellor’s Merit Scholarship. (see above)
<b>Honors College Academy Scholarship</b>	\$4,000 per year	Considerations made for Arkansas residents from geographically under-represented areas with a minimum 27 ACT and 3.50 GPA. Competitively awarded.	Complete Entering Freshmen Scholarship Application ( <a href="http://scholarships.uark.edu">http://scholarships.uark.edu</a> ) <b>Priority Deadline:</b> November 15	Criteria same as for Chancellor’s Merit Scholarship. (see above)
<b>Nonresident Tuition Award</b>	Out-of-state tuition differential Variable amount based on hours enrolled	Students from TX, MS, LA, KS, MO, OK or TN must have a 3.50 GPA. Entering freshmen must score 25 on the ACT (1130 SAT); Transfer students must have 24 credit hours and a 3.00 GPA.	Apply for admission. No scholarship application is required. <b>Deadline:</b> on a rolling basis until funds are exhausted	Renewable with completion of 30 hours per academic year, 3.00 minimum GPA. Up to 4 years (5 years for students in Architecture or the Master of Arts in Teaching program).
<b>Freshman Academic Scholarship</b>	\$2,000 non-renewable	Students who have demonstrated outstanding academic achievement. Competitively awarded.	Complete Entering Freshmen Scholarship Application ( <a href="http://scholarships.uark.edu">http://scholarships.uark.edu</a> ) <b>Priority Deadline:</b> November 15	Non-renewable
<b>University of Arkansas Leadership Award</b>	\$2,000 per year	Students who have demonstrated outstanding academic achievement and leadership potential. Competitively awarded.	Complete Entering Freshmen Scholarship Application ( <a href="http://scholarships.uark.edu">http://scholarships.uark.edu</a> ) <b>Priority Deadline:</b> November 15	Criteria same as for Chancellor’s Merit Scholarship. (see above)
<b>Silas Hunt Distinguished Scholarship</b>	Variable awards of \$5,000 or \$8,000	Students who have demonstrated outstanding academic leadership qualities and potential and are from under-represented communities, which include but are not limited to: under-represented ethnic and minority groups; students with interest in fields of study that do not attract members of their ethnicity or gender; under-represented counties in Arkansas; or a first-generation college student. Competitively awarded.	Complete Entering Freshmen Scholarship Application ( <a href="http://scholarships.uark.edu">http://scholarships.uark.edu</a> ) <b>Priority Deadline:</b> November 15	Criteria same as for Chancellor’s Merit Scholarship. (see above)
<b>Transfer Student Scholarship</b>	AATYC Academic All Star receives full-tuition scholarship. Alternate receives \$2,000 per year.	Strong academic performance in transfer college credit earned from an Arkansas two-year Institution.	Students nominated as AATYC Academic All Star or alternate by their two-year college.	Cumulative 3.00 GPA and 30 hours at the end of 2 years or 4 semesters of each award year (3 years or 6 semesters for students in Architecture or the Master of Arts Teaching program).

the fall and spring terms, up to an eight-semester maximum for most students, or a ten-semester maximum for students in architecture or pursuing a Master of Arts in Teaching. Renewal criteria are evaluated every two semesters. See <http://scholarships.uark.edu> for renewal schedules.

5. A student who is placed on academic warning forfeits his or her scholarship effective the semester of academic warning. See <http://www.uark.edu/admin/reginfo/docs/academicstanding/ASpolicy.html> for a full description.

### Scholarships, Grants, and Other Awards for Non-Resident Students

See page 33 in Fees & Costs.

## COLLEGE AND DEPARTMENTAL SCHOLARSHIPS

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

### School of Architecture

The School of Architecture offers a limited number of scholarships at various amounts to entering freshman in any of the degree programs offered by the School. Several scholarships are renewable annually to the recipient who maintains all the requirements of the scholarship. Upon graduation or forfeiture by the recipient, another scholarship is awarded.

Many upper level scholarships are available to continuing students. Applications are available in the fall and recipients selected in the spring for the following academic year. For more information and scholarship applications, please go to: <http://architecture.uark.edu/scholarships.html>

### J. William Fulbright College of Arts and Sciences

The J. William Fulbright College of Arts and Sciences offers many outstanding scholarship opportunities. Collectively, Fulbright's 19 departments offer more than 100 scholarships and awards. At the college level, 12 scholarships benefit students in the arts and sciences. For comprehensive information about these awards, call 479-575-4801 or visit the Web at <http://www.uark.edu/~arsc/students/scholarships.html>.

Three college-wide scholarships merit special attention: Through the Sturgis Fellowship Program, Fulbright College offers premier scholarships worth \$50,000 over four years to exceptionally talented students with the intellectual potential to become future leaders in society. In addition, all honors students are eligible to apply for research and study abroad funding through the Sturgis Grants Program. For information or an application, contact Director of Honors Studies at 479-575-2509.

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

In honor of the Fulbright commitment to international education, the College offers the J.W. and Elizabeth W. Fulbright Endowed Scholarship, which supports a year of study abroad. To qualify, students must display an interest in one of the following fields: literature, history (including theatre, art, and music history), jurisprudence, philosophy, archaeology, comparative

languages, and those aspects of the social sciences that employ philosophical or historical approaches. For more information about these opportunities, call 479-575-4801 or visit <http://www.uark.edu/~arsc/students/scholarships.html>.

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

The Division of Agriculture Land Grant Scholars Endowment Program provides up to 16 scholarships, dependent upon the availability of funds: the goal is to award one graduate fellowship at \$11,000; two undergraduate scholarships \$8,000 each, one to an entering freshman and the other to a new transfer student; 13 undergraduate scholarships for \$4,000 to three entering freshman and to ten new transfer students.

Dale Bumpers Distinguished Scholar Program provides one \$2,500 scholarship to the outstanding transfer undergraduate and a \$1,000 award to the outstanding Ph.D. graduate student and a \$500 award for the outstanding M.S. graduate student.

Information and application procedures regarding these and approximately 200 departmental scholarships are available on the college Web site: <http://bumperscollege.uark.edu/39.htm> or call the Scholarship Administrator at 479-575-2253.

### Sam M. Walton College of Business

The Boyer Fellowship is offered to Walton College students who have achieved at an outstanding level both in and out of the classroom. High grades and standardized test scores are required along with a strong commitment to service and the demonstration of exceptional leadership skills. Applicants for the Boyer Fellowship must demonstrate financial need.

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

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

### College of Education and Health Professions

The College of Education and Health Professions offers several hundred scholarship awards each year varying in amounts. Recipient selection is based on a variety of different attributes that are specific to each award. Attributes may include but are not limited to: academic achievement, financial need, and character.

Scholarship applications are available during the month of January each year. The application is electronic and can be found on the college's website at <http://coehp.uark.edu/scholarships.html>. Applications must be submitted by January 31st. All current and future students are strongly encouraged to apply. For further information please call 479-575-4420 or send an email to [ethogue@uark.edu](mailto:ethogue@uark.edu).

### College of Engineering

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

College scholarships are available to any engineering student while departmental scholarships are meant for students enrolled in a particular discipline of engineering. Students must be admitted to the University of Arkansas and

ARKANSAS ALUMNI ASSOCIATION SCHOLARSHIPS				
Name	Annual Award	Eligibility Criteria	Application Procedure	Renewal Criteria
<b>Alumni Association Endowed Scholarship</b>	\$6,500 per year for four years	Incoming freshmen with a minimum GPA of 3.60 and 24 ACT or 1090 SAT	Request applications on the web (arkansasalumni.org), by e-mail scholarships@arkansasalumni.org or by phone 1-888-ARK-ALUM.	3.00 GPA and completion of 30 hours per year.
<b>Arkansas License Plate, "Roads" Scholarship/ Alumni Board of Directors Scholarship</b>	\$1,500 per year for four years	Applicant finalists from the Alumni Association Endowed Scholarship who are residents of Arkansas. Non-Resident finalists will receive equivalent Alumni Board of Directors Scholarship.	Applications from the Alumni Endowed Scholarship will be considered.	3.00 GPA and completion of 30 hours per year.
<b>Alumni Chapter Scholarships</b>	Variable amount based on chapter funds	Minimum GPA of 3.50 and 24 ACT	Considered from both the Alumni Scholarship application and private chapter applications.	Varies from chapter to chapter
<b>Alumni Legacy Scholarship</b>	Out-of-state tuition differential. Variable amount based on hours enrolled	Non-resident students admitted as degree-seeking students with a 3.0 GPA and 20 ACT. Must have a parent, grandparent, aunt, uncle, sibling or spouse who graduated from the UofA and is an Arkansas Alumni Association member.	Complete a Legacy Scholarship Application on the Web (arkansasalumni.org) or contact the alumni scholarship office (1-888-ARK-ALUM).	Renewable for up to 8 semesters with the completion of 24 hours and a cumulative 2.75 GPA per year.
<b>Membership Funded Scholarship</b>	Need-based scholarships of variable amounts	Minimum high school GPA or 3.60 and 24 ACT or 1090 SAT	Applications from the Alumni Endowed Scholarship will be considered.	Recipients must reapply for renewal consideration.

accepted into the College of Engineering to qualify and receive either a college or departmental scholarship. The college has a one-step application process that allows a student to be considered for all college level scholarships and departmental scholarships.

For more information concerning scholarship and diversity opportunities, contact the College of Engineering Office of Academic & Student Affairs at 479-575-3051 or e-mail tic@uark.edu.

## SPECIAL SCHOLARSHIPS AND CONDITIONS

### ACT 1185

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

### Arkansas Alumni Association Scholarships

For information on Arkansas Alumni Association, please visit <http://alumni.uark.edu>.

### Music and Band

The Department of Music offers scholarships (both music scholarships and band scholarships) for talented students who sing or play instruments. All scholarships are based on playing ability, academic achievement, and potential contribution to music department ensembles. Scholarships are renewable for

up to five years (ten semesters), as long as the student meets the conditions specified on the scholarship letter or contract.

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

### Air Force and Army ROTC

The Air Force and Army Reserve Officer Training Corps programs offer a number of scholarship opportunities for entering freshmen and on-campus students. See the Reserve Officer Training Corps section of this catalog for detailed information.

### Veterans Benefits

The University of Arkansas is approved by the Arkansas Department of Education for veterans and veterans' beneficiaries who are working toward a degree. Veterans of recent military service, service members, members of reserve units, and the dependents of certain other servicemen may be entitled to educational assistance payments under the following programs: Title 38, Chapter 30, Montgomery GI Bill for Veterans; Title 38, Chapter 32, Veterans Educational Assistance Program (VEAP); Title 38, Chapter 35, Survivors and Dependents Education; and Title 10, Chapter 106, Montgomery GI Bill for Selective Reserves.

Students must be working toward a degree and following the curriculum outline for their objectives, since only specific courses may be applied toward VA certification and graduation. Students eligible for educational benefits may contact the Office of the Registrar for further information.

Detailed information regarding stipends and housing is provided in the chapter "Reserve Officer Training Corps."

# Orientation and Registration

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## ORIENTATION

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All new undergraduate students, both freshmen and transfer, are expected to attend an orientation session preceding their enrollment. The orientation program is designed to introduce every aspect of the university community to our students, enabling them to establish a bond with the institution and those here to support them. A significant aspect of this experience will be to provide students with information about the policies, support systems, and resources of the University, while engaging them with their advisers in the appropriate academic programs. To this end, students should complete the orientation program prepared to register for classes and ready to embark upon their academic careers. Students who attend the orientation program register during that time.

## REGISTRATION

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Undergraduate students, including students not declaring a major, must enroll in one of six academic units: the J. William Fulbright College of Arts and Sciences; the Dale Bumpers College of Agricultural, Food and Life Sciences, the Sam M. Walton College of Business, the College of Education and Health Professions, the College of Engineering, or the School of Architecture. Information regarding registration periods and procedures is found on the Web site of the Registrar's Office at <http://www.uark.edu/registrar/>.

### Registration Periods

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

### Student Addresses

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

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

### Identification Cards

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

### Academic Advising

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

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

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

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

### Arkansas State Requirements for Developmental Course Placement

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

- Students who score below 19 on the English section of the ACT or below 470 on the verbal score of the SAT must enroll in Remedial English 0003, which does not carry degree credit.
- Students who score below 19 on the reading section of the ACT or below 470 on the verbal score of the SAT must enroll in Developmental Reading ARSC 0013, which does not carry degree credit.
- Students who score below 19 on the mathematics section of the ACT or below 460 on the quantitative portion of the SAT must enroll in Remedial Math 0003, which does not carry degree credit. (The Mathematical Sciences Department requires higher ACT/SAT scores for students to be placed in Math courses above MATH 0003. Please see the Course Descriptions for MATH for details)
- Students will be required to register for these courses during their first term at the University and, if necessary, in subsequent terms until passing grades have been earned in all required courses. Students must successfully complete any required developmental course in English before enrolling in freshman English. Students must successfully complete any required developmental course in mathematics before enrolling in a college-level mathematics course. Students who need further information or clarification regarding this law are encouraged to discuss this with their academic adviser or dean.

### Courses That Do Not Count toward a Degree

The following courses do not count toward degree credit in any college or school ENGL 0003, MATH 0003, and ARSC 0013.

The following courses do not count toward any degree in the College of Engineering: MATH 1203 College Algebra, MATH 1213 Plane Trigonometry, MATH 1285 Pre-calculus Mathematics, and ENGL 2003 Advanced Composition.

### Registration for Grades of Pass-Fail

Students in some programs may register to take certain courses on a pass-fail basis. In such cases, a mark of "CR" (passed) or a grade of "F" (failed) will be recorded.

Students in the J. William Fulbright College of Arts and Sciences, the School of Architecture, and the Dale Bumpers College of Agricultural, Food and Life Sciences are eligible to enroll for certain courses on a pass-fail basis under the following conditions:

1. That such registration is approved by the student's adviser. (Students in Agricultural, Food and Life Sciences must also have the approval of their academic dean.)
2. That the student has attained sophomore rank or higher.
3. That the student is not on academic warning and has achieved a cumulative grade-point average of at least 2.00.
4. That such enrollment is limited to one course per semester.
5. That the total enrollment on a pass-fail basis be limited to no more than 18 hours in any student's degree program.

6. That the courses involved are not part of the student's major and are not specifically required as part of the student's degree program.
7. Normally, registration for pass-fail credit will be completed prior to the final date for changing registration by adding a course.

Grades for students enrolled on a pass-fail basis will be reported on final grade rosters in the usual manner. The dean's office will review each report and will authorize the registrar to record "CR" or "F" on the student's official academic record, as appropriate. The "CR" marks will not be counted in grade point averages but will increment hours earned; the "F" grade will be counted in the grade point average.

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

### Undeclared Major

Degree-seeking students who are undecided about their choice of a major field of study will be considered to have an undeclared major. However, all undergraduate students must enroll in one of the colleges or schools. Each of these academic units makes provisions for undeclared majors, and each has its own rules concerning the point at which a student must declare a major. Again, academic advisers will be of great assistance in determining the college or school in which a student with an undeclared major should enroll.

Walton College of Business students have the pre-business classification with an intended major until they complete specific lower-division courses, a process that normally takes four semesters. All engineering students are classified as pre-engineering students until they have satisfied the pre-professional program, which is normally completed during the freshman year.

### Registration for Audit

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

### Adding and Dropping Courses

A currently enrolled student who has registered during the advance registration period should make any necessary or desired schedule adjustments such as adding or dropping courses or changing course sections during the schedule-adjustment period of the same semester. Students may also add or drop courses during the first five class days of a fall or spring semester. Students who drop classes by the fifth day of classes in the fall and spring semesters will have their fees adjusted. (Refer to the Treasurer's Office Web site for summer dates and other sessions). Fee adjustments are not done for classes dropped after the first week of class. Drops and withdrawals are two different functions. In a drop process, the student remains enrolled. The result of the withdrawal process is that the student is no longer enrolled for the term. The two functions have different fee adjustment policies. Fee adjustment deadlines for official withdrawal are noted on the Treasurer's Web site.

A student may drop a full-semester course during the first 10 class days of a fall or spring semester without having the drop shown on the official academic record. After the first 10 class days, and before the drop deadline of the semester, a student may drop a course, but a mark of "W," indicating the drop,

will be recorded. A student may not drop a full-semester course after the Friday of the tenth week of classes in a fall or spring semester. Drop-add deadlines for partial semester courses and summer classes are listed on the fall and summer calendars located on the Web site of the Registrar's Office.

**Withdrawal from Registration**

Withdrawing from the University means withdrawing from all classes that have not been completed up to that time. A student who leaves the University voluntarily before the end of the fall or spring semester must complete an exit interview and then withdraw from all classes on the student registration system or notify the Office of the Registrar in writing. Withdrawal may occur anytime during the semester through the last day of classes. Withdrawal deadlines for summer sessions are listed on the summer calendar located on the Web site of the Registrar's Office; summer withdrawals do not require an exit interview. Students who do not withdraw officially from a class they fail to complete will receive an "F" in that class. Students with holds on their registration should contact the Office of the Registrar for assistance in processing their official withdrawal from the University.

The deadline for a full fee adjustment for an official withdrawal is the day before the start of classes for that term. After that date a \$45.00 withdrawal fee will be charged, and a percentage of the fees will be refunded. Refer to the Web site of the Treasurer's Office for the deadlines and percentages.

**Course Loads**

While University offices and services typically recognize the full-time status of students who have enrolled for a minimum of 12 semester hours, students should bear in mind that this minimum number of hours is insufficient to allow them to complete a four-year degree program in eight academic semesters (four years). Since most University degree programs require a minimum of 124 semester hours, or 31 hours per year, a student should earn 15 to 16 hours per semester to complete most degree programs in four years (eight semesters). The University offers degree-completion plans; see the Web site of the Registrar's Office or the Academic Regulation section of this catalog.

**Number of Hours Allowed per Semester**

The number of hours allowed includes Independent Study courses taken through Global Campus.

1. Students who wish to carry more than 18 hours per semester must first obtain the permission of their academic deans.

2. Students who wish to carry more than 21 hours per semester must first request and receive favorable action from the Academic Standards Committee.
3. Students on academic warning may not carry more than 12 hours per semester unless approved by their academic dean's office or advising center.
4. Students on academic suspension who choose the limited enrollment option may not carry more than 9 hours for that semester unless permission has been requested and granted by the Academic Standards Committee.
5. Students who wish to exceed the normal summer school load must have the approval of their academic deans to take seven hours in five- or six-week sessions or 13 to 14 hours in 10- or 12-week sessions. Students who wish to take more than seven hours in one five- or six-week session or more than 14 hours in one 10- or 12-week session must first receive favorable action from the Academic Standards Committee.
6. For students with severe injury or illness of a temporary or permanent nature, less than 12 hours may be certified on a semester-by-semester basis as full-time with the approval of the student's dean and the concurrence of a physician or licensed examiner.

STUDENT STANDING	
Definitions of undergraduate student classification are as follows:	
Classification	Course Hours Passed
Freshman	<30
Sophomore	>29 but <60
Junior	>59 but <90
Senior	≥ 90

# Fee and Cost Estimates for 2009-10

Educational expenses will vary according to a student's course of study, personal needs, and place of residence. All fees, charges, and costs quoted in this catalog are subject to change without notice. A survey tool for tuition and fee estimation is available at <http://treasurer.uark.edu/Tuition.asp?pagestate=Estimate>.

Financial obligations to the University must be satisfied by the established deadlines. Payment may be made at the University Cashier's Office in the lobby of Silas H. Hunt Hall by cash, personal check, money order, certified check, or VISA, MasterCard, or Discover credit cards. Payment may also be made online at <https://isis.uark.edu/>.

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

## ESTIMATED NECESSARY EXPENSES PER SEMESTER

*EDITOR'S NOTE: The University of Arkansas Board of Trustees approved tuition and fees for the 2009-10 school year prior to deadline for the CD edition of the Catalog of Studies. This PDF and the online edition have been updated.*

Estimates of necessary expenses for one semester of the 2009-10 academic year for a typical undergraduate student taking 15 credit hours per semester at the University of Arkansas:

	Undergraduate Resident	Undergraduate Non-Resident
Tuition <sup>1</sup>	\$2,505.00 (\$167.00/hr)	\$6,943.65 (\$462.91/hr)
University Fees <sup>2</sup>	554.55	554.55
TELE Fee <sup>3</sup>	169.95	169.95
SUBTOTAL	\$3,229.50	\$7,668.15
Room and Board <sup>4</sup>	\$3,904.00	\$3,904.00
TOTAL	\$7,133.50	\$11,572.15

Other variable costs per year:

\*Books, supplies, and lab fees \$1,083.00

\*Personal expenses and travel \$2,966.00

When paying tuition, room and board, and associated fees, anticipated financial aid for a current semester may be deducted when it is listed as anticipated aid on ISIS.

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

## TUITION FEES

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

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

### Academic Year

Undergraduate students are assessed tuition of \$167.00 per credit hour. Students with out-of-state residency status are assessed tuition of \$462.91 per credit hour.

Undergraduate students enrolled in the Walton College of Business courses are charged tuition of \$192.05 per credit hour in-state and \$532.35 per credit hour for out-of-state students.

Undergraduate students enrolled in the College of Architecture are charged tuition of \$175.35 per credit hour in-state and \$486.06 per credit hour for out-of-state students.

1. Students enrolled in College of Business courses are charged differential tuition at \$25.05 per credit hour more than standard undergraduate, in-state tuition. College of Architecture students are charged a differential tuition of 8.35.

2. University fees include the following:

Health, physical education and recreation fee	49.20
Student Health Center debt fee	13.05
Enhanced Learning Center	15.00
and the following student-initiated and student-approved fees:	
Student Activity fee	13.65
Student Health fee, calculated at \$7.11/credit hour,	106.65
Associated Student Government fee	10.35
Media fee	10.35
Arkansas Union fee, calculated at \$3.14/credit hour,	47.10
Fine Arts Activity fee	4.05
Technology fees are calculated at \$2.24/credit hour	33.60
Transit fee	36.15
Network Infrastructure and Data Systems fee (\$8.84/credit hour)	132.60
Safe Ride fee	3.30
Distinguished Lecture fee	6.75
Student Readership fee	4.50
Facilities Fee, calculated at \$4.00/credit hours	60.00
Concert Fee	8.25

3. Teaching Equipment and Laboratory Enhancement (TELE) fee. This figure reflects the per credit hour undergraduate fee for the College of Arts and Sciences. To obtain the per credit hour undergraduate fee for all colleges, view the Tuition Rate Schedule at <http://treasurer.uark.edu/Tuition.asp?pagestate=Estimate>

4. Weighted average expenses for living in a residence hall, double occupancy, with an unlimited meal plan. Actual room and board fees vary from \$3,355.00 to \$4,567.50 per semester.



FEES*		
Title	Description	Amount**
ARKANSAS UNION FEE	Supports the renovation, expansion, and partial operational costs of the Union	3.14
DISTINGUISHED LECTURE FEE	Pays for two speakers, one in the spring semester and one in the fall. Speakers represent 1) Arts and Entertainment Industry or 2) World Leader or Newsmaker. One speaker from each group is invited each year. Speakers are chosen by the Distinguished Lectures Committee, which is represented by students, staff, and faculty. Contact ASG for information on how to become a member of the committee. The lectures or presentations are free to students via the fee.	.45
ENHANCED LEARNING CENTER	Provides academic support, including individual and group tutoring and study skills workshops.	1.00
FACILITIES FEE	Provides support dedicated specifically to campus facilities needs, including major projects and deferred maintenance.	4.00
FINE ARTS ACTIVITY FEE	Supports cultural events free of charge, or with minimal charge, to students. Events include presentations in music, theater, drama, opera, visual arts, creative writing, and public speaking. Most are held on campus or at the Walton Arts Center. Fulbright College allocates the proceeds of the fee to support cultural programming.	.27
HEALTH, PHYSICAL EDUCATION, AND RECREATION FEE	Board of Trustees mandated fee supporting various physical education activities including intramural programs. Students are allowed access to gyms, the pool, fitness center, sauna, racquetball courts, and the indoor track.	3.28
HEADLINER CONCERTS FEE	Allows two major concerts, free to UA students, each academic year.	.55
MEDIA FEE	The University's student publications, specifically the Arkansas Traveler newspaper and the Razorback yearbook, are partially funded by the media fee. Students reserving a copy are provided with a Razorback yearbook.	.69
NETWORK INFRASTRUCTURE AND DATA SYSTEMS FEE	Provides support for the development and operation of the campus network, including electronic equipment, servers with software, and cabling. The network systems serve computer labs, academic and administrative buildings, residence halls and off-campus access facilities. Data systems will enable Web-based access to the University's information systems for students, faculty, and staff. Also provides support for upgrades and replacement of the student information system.	8.84
RAZORBACK READERSHIP FEE	Provides national and local newspapers on campus, free for students.	.30
SAFE RIDE FEE	Safe Ride: Operates the Associated Student Government's Safe-Ride Program, offering UA students (within the Fayetteville city limits) a free ride home Wednesday through Saturday, 10:30 p.m. to 3 a.m. This fee also funds the Night Owl Services on Monday and Tuesday evenings from 10 p.m. to midnight. See the Safe Ride Web site for more information at <a href="http://asg.uark.edu">http://asg.uark.edu</a> .	.22
STUDENT ACTIVITY FEE (UNIVERSITY PROGRAMS)	Funds University Programs. Students are admitted free to numerous programs presented throughout the year, except for major, promoted concerts.	.91
STUDENT ACTIVITY FEE (ASSOCIATED STUDENT GOVERNMENT FEE)	Allocated to registered student organizations	.69
STUDENT HEALTH DEBT FEE	Pays the debt service for the construction of the new Student Health Center.	.87
STUDENT HEALTH FEE	Covers the cost of office visits by physicians, registered nurses, and other health professionals, medical evaluations, women's health visits, and counseling and psychological service visits. Other services covered by the health fee include health promotion and education and 24-hour emergency care for counseling and psychological needs.	7.11
TECHNOLOGY FEE	Provides improvements in computer access for students: increasing dial-up ports, network access, lab support, training programs, and improvements in computing facilities.	2.24
TRANSIT FEE	Helps fund the Razorback Bus Transit System, which services the campus and neighboring community year round.	2.41
* Assessed each academic semester for which the student is enrolled: fall, spring, and summer **per credit hour		

### TEACHING EQUIPMENT AND LABORATORY ENHANCEMENT FEES

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

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

TEACHING EQUIPMENT AND LABORATORY ENHANCEMENT FEES	
College or School	Per Credit Hour Fee
Agricultural, Food and Life Sciences, Bumpers College of	\$ 8.74
Architecture, School of	18.36
Arts and Sciences, Fulbright College of	11.33
Business, Walton College of	18.87
Education and Health Professions	9.00
Engineering	27.33

<b>COLLEGE/COURSE SPECIFIC FEES</b>	
<b>COLLEGE OF AGRICULTURAL, FOOD AND LIFE SCIENCES</b>	
Apparel Studies Laboratory Fees HESC 1023, 1053, 2053, 2013, 3003, 4063, 4033	\$15.00\credit hour
Equine Behavior & Training ANSC 2304	25.00\credit hour
Fifth-year Internship Fee (M.A.T.) AGED 575V	\$100.00\semester
Horticulture Laboratory Fee HORT 3113	3.50\credit hour
Infant Development Center and Nursery School Fee HESC 2402 and 2401L, HESC 3402 and 3401L	15.00\credit hour
Interior Design Fee HESC 1034, 1044, 2805, 2815, 3805, 3815, 4805, 4815	15.00\credit hour
Teaching Internship Fee AGED 475V	\$65.00\semester
<b>COLLEGE OF ARCHITECTURE</b>	
International Study Fee (Architecture and Landscape Architecture Academic Plans)	\$4,262.29*
<b>COLLEGE OF ARTS AND SCIENCES</b>	
Fifth-year Internship Fee (M.A.T.) ARED 476V, MUED 451V	\$100.00\semester
<b>WALTON COLLEGE OF BUSINESS</b>	
Computer Competency WCOB 1120	\$54.21\semester
<b>COLLEGE OF EDUCATION AND HEALTH PROFESSIONS</b>	
BSE Fourth-year Student Teaching Fee (CIED 4173, CATE 406V, PHED 407V)	\$100.00\semester
Counseling Practicum Fee CNED 5343, CNED 6711	\$25.00\credit hour
Counseling Internship Fee CNED 574V CNED 674V section 1	\$25.00\credit hour
Curriculum Instruction Education Internship Fee CIED 3113, CIED 4113	\$25.00\credit hour
Fifth-year Internship Fee (M.A.T.) CIED 508V, CIED 514V, CIED 528V, PHED 507V, VOED 5004, VOED 5016	\$100.00\semester
Internship for Communication Disorders CDIS 578V	\$100.00\semester
Internship Program in Education Leadership EDLE 574V, EDLE 674V	\$25.00\semester
Malpractice liability insurance NURS 3314, 4242, 5111 and 5225	\$13.00\semester
Nursing Test Fee	\$75.00\semester
Off-Campus Practicum: Public School Site CDIS 548V	\$50.00\semester
PEAC 1481 Beginning Archery	\$5.00\credit hour
PEAC 1811 Beginning Canoeing	\$25.00\credit hour
PEAC 1831 Beginning Scuba Diving	\$130.00\credit hour
PHED 2002 Teaching and Leading Outdoor Recreation and Experimental Activities	\$10.00\course
PHED 407V Student Teaching Supervision	\$75.00\semester
PHED 407V Student Teaching Supervision	\$75.00\semester
RECR 1023 Recreation and Natural Resources	\$20\course
Special Education Lab fee, Practicum CIED 532V	\$25.00\credit hour
<b>COLLEGE OF ENGINEERING</b>	
MEEG 2100 course fee, computer aided design (CAD) competency	\$50.00\semester
*due initial Semester of enrollment, paid in semester installments, and retroactive to 8/15/2003	

<b>PROGRAM/SERVICE SPECIFIC FEES</b>	
English Language Placement Test (ELPT)	\$10.00
Graduation fees: Certificate	30.00
Baccalaureate Degree	25.00
Reapplication for Graduation	5.00
I.D. Card First card	22.00
Each replacement card	18.00
Infant Development Center for UA Student Families: (40 hrs/week) Materials per semester	25.00
Infants and Toddlers per week	200.00
Installment Payment Plan	25.00
International student (non-immigrant) application fee	50.00
International student per semester service fee (non-immigrants)	75.75
Sponsored Student Management Fee	275.00
International Visiting Student Program Fee	250.00
Late payment: On fifth day of classes if balance has not been paid	50.00
Additional fee at Nov. 30, April 30, and July 31 for fall, spring, and summer, respectively, if payment has not been made	50.00
Mandatory international student health insurance	1030.00\year
New student orientation: First Year Experience (New Admits Only)	100.00
Parents	50.00
Nursery School in Human Environmental Sciences	800.00\semester
Parking Permit (per vehicle)	
Remote	47.32
Student	70.36
Resident Reserved	456.14
Parking Garage Reserved	621.75
Motorcycle	47.32
Scooter	6.41
Residence Hall nonrefundable application fee (new students only)	35.00
Study Abroad Service fee	10.00\credit hour
Test Handling Fee	15.00
Transcript Fee - Official Copy	5.00
Miller Analogies Test (MAT)	70.00
Advanced Composition Exam Fee	20.00
Undergraduate application for admission	40.00
Additional late application fee	25.00
Withdrawal from the University fee	45.00

### Summer Sessions

Undergraduate students are assessed tuition fees of \$167.00 per credit hour. Undergraduate students with out-of-state residency status are assessed additional non-resident tuition of \$295.91 per credit hour.

Undergraduate students enrolled in the Walton College of Business courses are charged differential tuition of \$25.05 per credit hour.

Undergraduate students enrolled in the College of Architecture are charged differential tuition of \$8.35 per credit hour.

**FEE ADJUSTMENTS**

**Academic Semesters and Summer Sessions**

Students who officially withdraw (dropping ALL classes that have not been completed up to that time) from the University of Arkansas during the regular fall or spring semesters receive a cancellation of fees (see chart below), less an Administrative Withdrawal fee of \$45. Students who officially withdraw from a summer session or who drop classes in the summer also receive a cancellation of fees (see chart below).

ADJUSTMENTS OF TUITION AND FEES	
Adjustment Percentage	If withdrawn
100%	before the first day of the semester/session
90%	through the first 10% of days in the semester/session
80%	through the second 10% of days in the semester/session
70%	through the third 10% of days in the semester/session
60%	through the fourth 10% of days in the semester/session
50%	through the fifth 10% of days in the semester/session
40%	through the sixth 10% of days in the semester/session

**Billing Statements**

Students who pre-register for a semester will be mailed an invoice approximately three weeks prior to the first day of classes. Invoices will be mailed to the student’s permanent address unless a separate billing address has been established on ISIS.

It is the responsibility of the student to ensure a correct billing address on the Student Information System (See Addresses, below). The late fee will not be waived because an invoice was not received. Please note that effective February 1, 2010, the Treasurer’s Office will no longer distribute paper bills through the mail to help save time, money and resources.

**Late Fees**

Students who register for the fall 2009 and spring 2010 semesters are required to pay all charges by the posted payment deadline. Students who fail to pay all charges or who fail to execute an installment payment plan by the deadline may be assessed a late payment fee equal to the outstanding balance, not to exceed \$50.00.

Any student with an outstanding balance, to include registration-related fees and/or housing charges, by the last payment deadline will be assessed an additional late payment fee equal to the outstanding balance, not to exceed \$50.00.

**Disbursement of Refund Checks**

Disbursement of refund checks due to overpayments by scholarships, loans, and/or grants will be mailed approximately five (5) days prior to the start of classes. Checks will be mailed to the student’s permanent address unless a check address has been established on ISIS. Students may also receive a refund through direct deposit. Sign up for direct deposit through the Student Center on ISIS. The link is located beneath “account inquiry” on the left side of the screen.

**Addresses**

Students may create a billing address, which will be used specifically for billing statements, and a check address, which will be used specifically for over-payment checks. These addresses may be created in addition to the local and permanent addresses. If a billing or check address is not created, the default address will be the permanent address. The student may change their address on the ISIS Web site in the Student Center.

**STUDENTS CALLED INTO ACTIVE MILITARY SERVICE**

When a student or student’s spouse is activated for full-time military service during a time of national crisis and is required to cease attending the University of Arkansas without completing and receiving a grade in one (1) or more courses, they shall receive compensation for the resulting monetary loss as provided by Fayetteville Policy 504.2. To be eligible for the compensation, the student must provide, prior to activation or deployment for military service, an original or official copy of the military activation or deployment orders to the Registrar. A student whose spouse is a service member shall provide proof of registration with the Defense Enrollment Eligibility Reporting System (DEERS) of the Department of the Defense that establishes that dependent children reside in the household of the student and the service member. Upon leaving the University of Arkansas because of active duty or deployment, the student may choose one of three compensatory options. The student may officially withdraw and receive full adjustment and refund of tuition and non-consumable fees for the term involved; the student can remain enrolled and arrange for a mark of “Incomplete” for each class and finish the courses twelve (12) months after deactivation; or the student may receive free tuition and fees for one (1) semester after deactivation. For more detailed information, refer to Fayetteville Policy 504.2

**WAIVER OF TUITION AND FEES FOR SENIOR CITIZENS**

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

**ROOM AND BOARD**

**University Housing**

(Rates are subject to change)

(Rates are subject to change)

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

Costs of room and board in University residence halls for one semester during the 2009-10 academic year range from \$3,355.00 to \$4,567.50 for double occupancy rooms and with an unlimited meal plan. Single rooms are additional and are available on a first-come, first-serve basis.

Housing for married students, students with family status, nontraditional, graduate, and law students is limited and requires early application.

Summer rates for room in University residence halls during summer sessions are \$30.37 per day for a single. Charges start on the requested move-in day and run through the date of check-out.

Specific questions concerning on-campus living or meal plans may be directed to University Housing (479) 575-3951. Specific questions concerning sorority and fraternity living may be directed to the Office of Greek Affairs (479) 575-5001.

## Off-Campus Housing

Students eligible to live off-campus may contact local real estate offices for rental information and availability.

## OTHER GENERAL FEE INFORMATION

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

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

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

For residence life and dining services fees, charges, and refund policies contact University Housing, Attention: Assistant Director for Business, Hotz Hall, 9th floor, (479) 575-3951.

For parking services fees, charges, and refund policies contact: Parking and Transit, Administrative Services Building, 155 Razorback Road, (479) 575-3507.

For other fees, charges, and refunds, contact the Treasurer’s Office, 215 Administration Building, Attention: Treasurer, (479) 575-5651.

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

Students are allowed to have automobiles at the University, although parking is quite limited. There is a parking permit and registration fee ranging from \$47.32 to \$621.75 for each vehicle, depending upon the parking option selected.

## STUDENT RESIDENCE STATUS FOR TUITION AND FEE PURPOSES

Board Policy 520.8 (January 18, 1985, revised)

### Determination of Residence Status

#### 1. Purpose

The purpose of these regulations is to enable the administrative officers of the University of Arkansas to classify students for the purpose of paying student fees, as either “in-state” or “out-of-state,” so as to accord fairness and equity to the students of the University and to the public that provides support for the educational services provided by the University.

#### 2. Initial Classifications

- a. A student shall be admitted to the University in an “in-state” or “out-of-state” status for university fee purposes, as established under these regulations.

Except as otherwise provided under these regulations, a student classified as “in-state” for university fee purposes at the time of admission must have established a bona fide domicile in Arkansas and must have resided continuously in this state in that bona

fide domiciliary status for at least six consecutive months prior to the beginning of the term or semester for which fees are paid.

- b. A bona fide domicile is a home of apparent true, fixed, and permanent nature, a place of actual residing for all purposes of living that may be distinguished from a temporary sojourn in this state as a student. The person claiming domicile in Arkansas must provide evidence of permanent connection with the State of Arkansas and demonstrate the expectation of remaining in this state beyond graduation. For purposes of implementing these policies, the Administration is directed to articulate standards that will be applied in making the determination of residence.
  - c. Except as otherwise provided under these regulations, the domicile of an adult (18 years of age or older) or emancipated minor student shall be determined on the basis of his or her own domicile.
  - d. Except as otherwise provided under these regulations, the domicile and residence of an unemancipated minor student (less than 18 years of age) or an unmarried dependent who has not attained the age of 23 is legally that of the parents or surviving parent; or such other person legally standing in the place of a parent to the student and with whom the student in fact makes his or her home and who has been making substantial contributions to the support of the student for at least six consecutive months prior to the term or semester for which the fees are paid.
  - e. A student who cannot satisfy the criteria for Arkansas domicile and residence will be classified as an “out-of-state” student and will pay fees and tuition accordingly. The student on a temporary visa will be classified as a foreign student and will pay non-resident tuition and fees. A student who has been granted a permanent visa and has been domiciled in Arkansas for six consecutive months following receipt of the permanent visa shall be classified as an Arkansas resident for fee purposes.
  - f. The responsibility for registering under a proper classification for student fee purposes is placed upon the student. It is the duty of each student at each time of registration to call any question about residency classification status to the attention of the campus classification review officer in a timely fashion in order that the question may be settled (see 4. Procedures).
  - g. The six-month period required in paragraph A of these regulations may be waived for persons, their spouse, and their unmarried children who have not yet attained the age of 23 (dependents are the spouse and unmarried children who are legal dependents as defined by the IRS) and who move to Arkansas with attendance at the University only a by-product of the primary purpose of establishing domicile in this state.
  - h. An unmarried student who has not reached the age of 23 years having one parent residing in Arkansas (for at least six consecutive months immediately prior to the beginning of the term or semester in which the fees are to be paid) may be considered an “in-state” student for fee purposes, even if that student resided outside the state with the other parent before coming to Arkansas to attend the University.
  - i. Marriage is recognized as emancipation for both females and males.
  - j. The spouse of a person continuously domiciled in Arkansas (for at least six consecutive months immediately prior to the beginning of the term or semester in which the fees are to be paid) upon request shall be classified as “in-state” for fee purposes.
- ### 3. Reclassifications
- a. The initial classification of a student will not prejudice a different classification for following terms or semesters. However, a student’s

prior domicile is assumed to continue until he or she clearly establishes a new domicile in Arkansas (see #4 below).

- b. A student previously classified as “out-of-state” may be reclassified as “in-state” for fee purposes if he or she has established a bona fide domicile in Arkansas and has resided continuously in this state in that bona fide domiciliary status for at least six consecutive months prior to his or her reclassification by the University. In order for an adult or an emancipated minor to establish a bona fide domicile in Arkansas for fee purposes, he or she must have left the parental home, must have established in this state a home of a permanent character as manifested objectively by good faith acts, and must have the expectation of remaining in this state beyond graduation. The single fact of presence in Arkansas for at least six months of attendance as a student enrolled in the University of Arkansas, or any other educational institution, neither constitutes nor necessarily precludes reclassification as one domiciled in Arkansas, but will be a factor to be considered.

#### 4. Procedures

- a. A student shall have the burden of establishing any claim that he or she is entitled to be treated as “in-state” for fee purposes. Persuasive evidence to that effect must be presented in writing and verified under oath by the student. Mere claims of local domicile and duration of stay are of little weight. A student who knowingly gives erroneous information in an attempt to evade the payment of “out-of-state” fees may be subject to dismissal from the University.
  - b. All disputed classifications for student fee purposes, whether at initial enrollment or subsequent enrollments, and all disputed reclassifications will be decided initially on each campus by a classification review officer designated by each Chancellor.
  - c. The Chancellor of each campus will designate a campus classification appeal officer to receive petitions from decisions made by the campus classification review officer. Each campus classification appeal officer may, in his or her discretion, make investigations, receive evidence, and conduct informal hearings. After considering the case, the campus classification appeal officer will render a decision and notify the affected student of the decision in writing. Any decision of the campus classification appeal officer may be appealed to the Vice President for Academic Affairs of the University of Arkansas System, who shall recommend final disposition to the President of the University.
  - d. Written notice of the appeals procedure will be provided to each student raising a question about his or her status with the campus residency classification review officer.
  - e. Determination of domicile will be based on a review of all pertinent facts, evidence, and circumstances that collectively show, in an objective and clear manner, the actual domicile of the student.
- NOTE: In implementing these policies, it is presumed that dependent students who are classified as non-residents based upon parental/guardian domicile outside of Arkansas do not acquire Arkansas residency under Board of Trustees Policy 520.8 unless and until their parent(s)/guardian(s) have established a domicile in Arkansas, or the student has left the parental home and established a domicile in Arkansas evidenced by proof that he or she has established a home of a permanent character as manifested objectively by good faith acts, resided in Arkansas in bona fide domiciliary status for at least six consecutive months prior to his or her reclassification as an Arkansas resident, and demonstrates the expectation of remaining in this state beyond graduation.

#### Reclassification Deadlines

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

#### Resident Status of Native Americans

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

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

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

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

Effective January 1, 1975, members of the Armed Forces who are stationed in the State of Arkansas pursuant to military orders, and their unemancipated dependents, shall be entitled to classification as in-state students for fee paying purposes (per Arkansas stat. Ann. 80-3366).

Persons continuously domiciled in Arkansas for at least 12 consecutive months who enter active military service from this state and who maintain Arkansas as the permanent home of record while on active military duty, and their dependents (the spouse and unmarried children who are legal dependents of the military person as defined by the IRS), shall be entitled to classification as in-state students for fee paying purposes. This provision is forfeited if the military person does not return to Arkansas within twelve months after separation, discharge, or retirement from active duty.

Persons serving in active military service who demonstrate a change of bona fide domicile from another state to Arkansas at least twelve consecutive months prior to separation, discharge, or retirement from active military duty, and the dependents (the spouse and unmarried children who are legal dependents of the military person as defined by the IRS), shall be entitled to classification as in-state students for fee paying purposes. This provision is forfeited if the military person does not return to Arkansas within twelve months after separation, discharge, or retirement from active duty.

#### Resident Status of Students from Texarkana, Texas, and Bowie County, Texas

(Board Policy 520.10)

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

# Academic Regulations

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## ACADEMIC HONESTY

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### Introduction

The University of Arkansas, Fayetteville, presents this policy as part of its effort to maintain the integrity of its academic processes. Academic honesty should be a concern of the entire University community, and a commitment to it must involve students, faculty, and administrators.

Students must understand what academic integrity is and what the most common violations are. With that understanding they must commit themselves to the highest standards for their own, as well as for their peers', academic behavior.

Public support and encouragement of the faculty is a second critical component necessary to strengthen academic integrity on campus. Faculty members must be continually vigilant in the management of their classes, their assignments, and their tests.

Finally, the administration of the University must present to the students standards of academic integrity. Those standards must be part of a publicly recognized, understood, and accepted set of policies and procedures that can be applied consistently and fairly in cases of academic dishonesty.

It is the responsibility of each student, faculty member, and administrator to understand these policies. A lack of understanding is not an adequate defense against a charge of academic dishonesty.

With regard to the application of this policy, the University assures its support of faculty members and other employees of the University who are acting in good faith in the course and scope of their employment and in the performance of their official duties.

This policy is only a part of the University's effort to promote academic integrity in all aspects of its programs. By necessity, this part discusses only prohibited acts and a process of applying sanctions. The ultimate goal, of course, is to provide an atmosphere that will make superfluous the procedures and sanctions that follow.

### Definitions

Academic dishonesty involves acts that may subvert or compromise the integrity of the educational process at the University of Arkansas. Included is an act by which a student gains or attempts to gain an academic advantage for himself or herself or another by misrepresenting his or her or another's work or by interfering with the completion, submission, or evaluation of work. These include, but are not limited to, accomplishing or attempting any of the following acts:

1. Altering of grades or official records.
2. Using any materials that are not authorized by the instructor for use during an examination.
3. Copying from another student's paper during an examination.

4. Collaborating during an examination with any other person by giving or receiving information without specific permission of the instructor.
5. Stealing, buying, or otherwise obtaining information about an examination not yet administered.
6. Collaborating on laboratory work, take-home examinations, homework, or other assigned work when instructed to work independently.
7. Substituting for another person or permitting any other person to substitute for oneself to take an examination.
8. Submitting as one's own any theme, report, term paper, essay, computer program, other written work, speech, painting, drawing, sculpture, or other art work prepared totally or in part by another.
9. Submitting, without specific permission of the instructor, work that has been previously offered for credit in another course.
10. Plagiarizing, that is, the offering as one's own work the words, ideas, or arguments of another person without appropriate attribution by quotation, reference or footnote. Plagiarism occurs either when the words of another (in print, electronic, or any other medium) are reproduced without acknowledgement or when the ideas or arguments of another are paraphrased in such a way as to lead the reader to believe that they originated with the writer. It is the responsibility of all University students to understand the methods of proper attribution and to apply those principles in all materials submitted.
11. Sabotaging of another student's work.
12. Falsifying or committing forgery on any University form or document.
13. Submitting altered or falsified data as experimental data from laboratory projects, survey research, or other field research.
14. Committing any willful act of dishonesty that interferes with the operation of the academic process.
15. Facilitating or aiding in any act of academic dishonesty.

### Procedures

Sanctions for acts of academic dishonesty may be applied in the following ways:

#### A. Instructor Action

When an instructor determines or believes that a student in the instructor's class is guilty of academic dishonesty deserving of sanction, the instructor should within five working days follow one of the following: (If the instructor is either a graduate teaching assistant or a temporary faculty member, then a supervising faculty member or the departmental head or chairman may assist in the handling of an academic dishonesty case.)

1. The instructor may determine a grade sanction and within five working days report that sanction, along with the essential details of the incident, to the judicial coordinator in Student Affairs. There is, under these circumstances, no request for administrative or judicial action. The student sanctioned in this way and instructor will be notified by Student Affairs and will have five working days from that notification to request a hearing by the All University Judiciary (AUJ) as outlined in Section B.2 below. If the student does not request a hearing within five working days, then it is assumed that the sanction is not contested. The student will be required to have a conference with the judicial coordinator so that the consequences of the action can be made clear.

During the course of the hearing, the student's participation in the affected class should continue so that any action can be reversed without prejudicing the student's academic performance and evaluation. Should the hearing process not support the grading sanction applied by the instructor, then the instructor and student may agree and remedy the sanction with the student proceeding in the class without prejudice. If the instructor and the student cannot so agree, or if the grading sanction cannot be remedied, then the student may appeal via the Academic Appeal Structure for Undergraduate Students.

If the defense of any grade is based on alleged academic dishonesty and the faculty member has not followed the University policy, the ability of the faculty member to defend his or her action may be adversely affected.

2. The instructor may file an incident report form referring the case to the judicial process for determination of guilt or innocence and the application of sanctions. If the student is determined to be guilty of academic dishonesty, then the instructor may apply a grade sanction in addition to whatever sanctions are applied by the judicial process. While such a case is pending in the judicial process, the student's participation in the affected class should continue to avoid pre-empting the options available after the guilt or innocence is determined. This course of action is appropriate in cases where there is doubt about guilt or innocence or in cases where the offense deserves sanctions beyond the grading system.

### **B. Judicial Process**

If the instructor chooses to refer the case to the judicial process as outlined in A.2 or if another student, faculty member, or administrator wishes to charge a student with academic dishonesty, the following procedures will be followed:

1. Administrative Action. This would involve the application of a sanction or an admonition or some type of probation following established guidelines by the judicial coordinator after an incident has been reported by a faculty member, an administrator, or a student. Such action may be appropriate in cases where there is little or no disagreement as to the details of the reported incident. Administrative sanctions may be appealed by any party in the incident to AUJ within three working days of notification of the administrative action.
2. All-University Judiciary (AUJ). This involves application of sanctions for academic dishonesty after the case has been heard and decided by AUJ. This would be used in contested cases, cases of appeals of instructor or administrative actions, any case involving a student with a previous record of academic dishonesty or who previously received a grade sanction for academic dishonesty and in cases where the sanction could result in suspension or expulsion from the University. The procedures involved in AUJ action are available from Academic Affairs or Student Affairs.

Any action of AUJ may be appealed within five working days

through the Provost/Vice Chancellor for Academic Affairs to the Chancellor of the University. If the Chancellor discovers evidence previously unavailable to AUJ, then the Chancellor may explain in writing to the Chair of AUJ and ask that AUJ rehear the case.

### **Sanctions**

The choice of sanctions in cases of academic dishonesty always involves consideration of the integrity of the educational process of the University. There is no place in that process for academic dishonesty, and if a student is undermining the integrity of that process, then separating that student from the University is the natural sanction. The intent of this policy is to make acts of academic dishonesty clear risks – that is, the sanctions are to be sufficiently heavy to deter academic dishonesty. Thus, the application of a grade sanction as the only sanction is to be very carefully considered and should occur only in unusual cases.

The following are possible sanctions for academic dishonesty:

1. Grading Sanctions. An instructor may apply grading sanctions. Such sanctions may also be recommended by either the judicial coordinator in case of administrative action or by AUJ, but the final decision will be that of the instructor. Grade sanctions may consist of either grades of zero or failing grades on part or all of a submitted assignment or examination, or a lowering of a course grade, or a failing grade. All grade sanctions must be appropriately reported as outlined in the procedures above. A grade sanction may be appealed by the student via the Academic Appeal Structure for Undergraduate Students.
2. Admonition or Probation. These are applied by either administrative action or AUJ action. The types:
  - a. Admonition. This is a firm warning against future violations, filed in the office of the judicial coordinator.
  - b. Conduct Probation. This is a probation imposed for a specified period and constitutes a final warning and a second chance to demonstrate what has been learned and to show improved judgment.
  - c. Personal Probation. This is a probation imposed for a specified period and constitutes a final warning of more severe sanctions. This requires the student to meet periodically with a University official to discuss and explore alternatives to the kind of behavior that resulted in the sanction.
  - d. Disciplinary Probation. This is probation imposed for a specified period and constitutes a warning that affects the student's good standing in the University. Violations of regulations during the period are likely to result in suspension or expulsion. During the period, the student is no longer to hold campus offices, receive honors, or represent the University in extracurricular or intercollegiate activities.
  - e. Educative Sanctions. These include a variety of assignments, tasks, or experiences that should make the offender more aware of the nature of the general problem of academic dishonesty. These may be applied in conjunction with any admonition or probation.
3. Suspension. Suspensions for a specified period of time from the University may be recommended by AUJ. Such suspensions may be for the remainder of a semester or for a specified number of semesters. In cases of clearly premeditated cheating or cases where either illegal actions or conspiracy with others is involved, suspension for at least the remaining part of a semester or one full semester must be considered as a sanction. Also, suspension will normally be the minimal sanction in cases where a student is guilty of academic dishonesty for a second time.

4. Expulsion. Expulsion from the University for an indefinite period of time may be recommended by AUJ.

### Implementation and Review

For details of procedures for implementing this policy, contact the Office of the Provost/Vice Chancellor for Academic Affairs. This University policy does not preclude the implementation by colleges of policies determined by the Provost to be more rigorous.

### TERM PAPER ASSISTANCE

The use of services of term paper assistance companies is a violation of University policies on academic integrity. Student submission of such research or term papers to meet requirements of any class or degree program is expressly prohibited and constitutes academic dishonesty. Any violation of this prohibition will automatically result in both punitive action by the instructor (e.g., the award of a grade of "F" for the course) and a referral of each violation to the All-University Judiciary Committee for its consideration.

### ATTENDANCE

Education at the university level requires active involvement in the learning process. Therefore students have the responsibility to attend classes and to actively engage in all learning assignments or opportunities provided in their classes. Instructors have the responsibility to provide a written policy on student attendance that is tied to course objectives included in a course syllabus. There may be times, however, when illness, family crisis, or University-sponsored activities make full attendance or participation impossible. In these situations students are responsible for making timely arrangements with the instructor to make up work missed. Such arrangements should be made in writing and prior to the absence when possible.

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

### RELIGIOUS OBSERVANCES

Although Christian religious holidays are reflected to some extent in the academic calendar of the University, holidays of other religious groups are not. When members of other religions seek to be excused from class for religious reasons, they are expected to provide their instructors with a schedule of religious holidays that they intend to observe, in writing, before the completion of the first week of classes. The Semester Calendar on the registrar's Web site will inform students of the University calendar of events, including class meeting and final examination dates, so that before they enroll they can take into account their calendar of religious observances. Scheduling should be done with recognition of religious observances where possible. However, faculty members are expected to allow students to make up work scheduled for dates during which they observe the holidays of their religion.

### FINAL EXAMINATION POLICY

Each faculty member is required to give final examinations at times specified in the final examination schedule. Whenever circumstances make necessary a deviation from the announced schedule, clearance for such deviation must be obtained from the appropriate dean and the Provost/Vice Chancellor for Academic Affairs.

During finals week, students are required to sit for no more than 2 final exams in a single calendar day period. A student with three or more finals in a single day has the right to an alternative exam date(s) for each exam exceeding two. The student must submit a formal request for an alternative date in writing, along with an official copy of their class schedule, to the professors of those classes involved, requesting voluntary adjustment by faculty. If no voluntary resolution is reached, exams in classes with lower course numbers (e.g., ARHS 1003) take precedence over those with higher numbers (e.g., MGMT 3563).

Requests must be submitted on or before the last day to drop a full semester class with a mark of "W." Professors will provide the student with an alternative exam date and time, and that response will be no later than one week after the last day to drop a full semester class with a mark of "W." Unless otherwise agreed upon by the student and the Provost, all rescheduled final exams are to take place during the university designated final exam dates and times. If a student has an objection to the alternative exam date or time, they may appeal to the instructor's department chair. It is the policy of the University to minimize student participation in extracurricular activities during the final examination period. No meetings, social activities, athletic events, or other extracurricular activities that require student participation will be scheduled on Dead Day or during the final examination period. Any exceptions to this policy must receive prior approval from the Provost/Vice Chancellor for Academic Affairs.

### GRADES AND MARKS

Final grades for courses are "A," "B," "C," "D," and "F" (except for courses taken in the School of Architecture and the College of Agricultural Food and Life Sciences).

GRADES AND MARKS		
Grade/Mark	Given For:	Grade Points
A	Outstanding achievement, given to a relatively small number of excellent scholars	4
B	Good achievement	3
C	Average achievement	2
D	Poor but passing work	1
F	Failure, unsatisfactory work	0
I	Incomplete course requirements	n/a
AU	Audit, officially registered	n/a
CR	Credit without grade points	n/a
S	Satisfactory work in courses w/o credit	n/a
W	Withdrawal	n/a

No credit is earned for courses in which a grade of "F" is recorded. A final grade of "F" shall be assigned to a student who is failing on the basis of work completed and who has not completed all requirements. The instructor may change an "F" so assigned to a passing grade if warranted by satisfactory completion of all requirements. Students who fail to present an acceptable reason for not having completed all course requirements including the final



examination will receive the grade they would have received had they failed such requirements.

A mark of "I" may be assigned when a legitimate good cause has prevented the student from completing all course requirements, and the work completed is of passing quality. It is the discretion of the instructor that determines what qualifies as a legitimate good cause. It is recommended that the instructor, prior to the assignment of an "I" mark, document the legitimate good cause and conditions for completing course requirements. An "I" so assigned may be changed to a grade provided all course requirements have been completed within 12 weeks from the beginning of the next semester (excluding summer semesters) of the student's enrollment after receiving the "I." If the instructor does not report the grade within the 12-week period, the "I" shall be changed to an "F." When a mark of "I" is changed to a final grade, the grade points and academic standing are appropriately adjusted on the student's official academic records.

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

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

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

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

"I," "AU," "CR," "S," and "W" marks will not be counted in the grade-point average. Grades of plus and minus are assigned grade-point values in the College of Agriculture (page 71) and School of Architecture (page 104). The grade-point average is computed by dividing the total number of grade points by the total number of credit hours attempted in courses for which grades (rather than marks) are given. Students who utilized grade renewal or grade forgiveness in retaking courses (prior to Fall Semester 1986 and after Fall 1996) have only the last grade used in computing grade-point averages.

**UNDERGRADUATE GRADE FORGIVENESS POLICY**

Under the Grade Forgiveness Policy, a student may improve the undergraduate cumulative GPA by repeating a maximum of two courses (up to nine hours) in which a grade of "D" or "F" was received and requesting that the repeat grade be the only one that is counted in the calculation. Only two such

requests are available to any student in his or her undergraduate career. The repeated grade must be in the same course taken at the University of Arkansas, Fayetteville. Only a course in which a grade of "D" or "F" was earned may be repeated under the Forgiveness Policy. Grade forgiveness may not be used to replace a grade assigned as a result of academic dishonesty. The student must file a written petition to use grade forgiveness indicating which course(s) he/she chooses to grade renew; the petition must be completed and approved prior to graduation. Both attempts at the course will remain on the transcript, but only the second will be used to calculate both credit and GPA. The first attempt and the grade earned will be recorded on the transcript with the symbol "R" to denote that it has been repeated. Students considering grade forgiveness should be aware that many graduate schools, professional schools, employers or other institutions, in considering admission or employment, recompute the GPA and include all courses attempted even though a course was repeated. This means that if the cumulative GPA has been raised because of grade renewal or forgiveness, the recomputed GPA will be lower.

**SEMESTER HONOR ROLL**

The colleges of the University publish, after the close of each semester, an honor roll of the highest ranking students in the college containing the names of not more than 10 percent of the undergraduate students of each class. Students are eligible for the honor roll if they are carrying at least 12 semester hours normally required for graduation by their college for their respective year. Most colleges refer to this part of the honor roll as the Dean's List.

In addition, a Chancellor's List is published each semester which recognizes those undergraduate students who achieve a 4.00 grade-point average. Students must also be carrying at least 12 semester hours normally required for graduation to be eligible for the Chancellor's List.

For honor roll eligibility, the 12 semester hours must all be in courses for which grade points are earned.

**FIRST-RANKED SENIOR SCHOLARS**

A first-ranked senior scholar shall be recognized at the annual Commencement of the University of Arkansas, Fayetteville. The scholar or scholars so recognized must have a cumulative grade-point average of 4.00 on all course work completed at the time selection is made, must have applied for graduation for a semester to be a member of the appropriate class and must have completed all courses required for the baccalaureate degree at the University of Arkansas, Fayetteville, or in a program of study approved by the Director of Honors or other designee in the college in which the student is enrolled. In determining the cumulative grade-point average for the purposes of such awards, grade forgiveness, is not accepted.

ACADEMIC STANDING CHART						
Cumulative Hours Earned	GOOD ACADEMIC STANDING when cumulative GPA is	Placed on ACADEMIC WARNING when cumulative GPA is	Continued on ACADEMIC WARNING when term GPA is	SUSPENDED* when term GPA is	DISMISSED** when term GPA is	Continued on ACADEMIC WARNING*** when term GPA is
0-16 hours	1.50 or higher	Less than 1.50	1.50 or higher	Less than 1.50	Less than 2.00	2.00 or higher
17-32 hours	1.60 or higher	Less than 1.60	1.60 or higher	Less than 1.60	Less than 2.00	2.00 or higher
33-45 hours	1.75 or higher	Less than 1.75	1.75 or higher	Less than 1.75	Less than 2.00	2.00 or higher
46-60 hours	1.90 or higher	Less than 1.90	1.90 or higher	Less than 1.90	Less than 2.00	2.00 or higher
61 hours +	2.00 or higher	Less than 2.00	2.00 or higher	Less than 2.00	Less than 2.00	2.00 or higher

\* No student may be suspended who has not spent the prior term of enrollment on academic warning.  
 \*\* No student may be dismissed who has not been suspended during a prior term of enrollment.  
 \*\*\* Following Suspension and Following Dismissal

## SENIOR SCHOLAR

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Since 1941 a key has been awarded to the graduating senior from each undergraduate college who has the highest grade-point average and who has completed at least half of his or her degree work at the University of Arkansas.

## ACADEMIC PROGRESS, SUSPENSION AND DISMISSAL

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

**Good Standing:** Upon initial admission and during a student's first term of enrollment, except for transfer students, the student is in good standing. (The standing of a transfer student reflects the student's prior record and the status assigned upon admission). A student remains in, or returns to, good academic standing at the end of any term when the cumulative GPA is at or above the required minimum.

**Academic Warning:** When a student's cumulative GPA falls below the minimum required for good standing, the student will be put on academic warning. This status is not recorded on the student's permanent academic record and will not appear on transcripts. A student who enrolls for a term on academic warning may take no more than 12 hours (unless more are approved by the student's adviser and dean). To continue for one or more additional terms on academic warning, the student must earn a term GPA at or above the cumulative GPA required for good standing. The student can remain on academic warning until the cumulative GPA is at or above the required minimum for good standing unless the student becomes subject to academic suspension by failing to earn the required term GPA.

**Academic Suspension:** A student on academic warning who does not earn the minimum required term GPA will be suspended from full-time enrollment. No student may be suspended who has not spent the prior term of enrollment on academic warning. A student on academic suspension has two alternatives: limited enrollment or academic leave of one year from the University.

Students who choose limited enrollment may enroll for up to nine hours of on-campus or Independent Study course work taken through Global Campus (as approved by the student's adviser and dean) and must earn at least six hours of credit with grades of C or higher in six hours while maintaining a term GPA of 2.0. A student who meets these conditions may enroll for a subsequent term on academic warning following suspension. Students who meet the 2.0 GPA requirement but do not complete six hours will not be allowed to enroll for the remainder of the one-year suspension period.

Students who choose academic leave may apply for readmission one year after the term of the suspension. A student who does not earn credit from another institution will be readmitted on academic warning following suspension. A student who earns credit from another institution(s) during or subsequent to the year of suspension must apply to the University for admission as a transfer student and, if readmitted, will be on academic warning following suspension.

**Academic Warning Following Suspension:** A student on academic warning following suspension may take no more than 12 hours (unless more are

approved by the student's adviser and dean) and must earn a term GPA of 2.00 or higher for each term of enrollment until the student's cumulative GPA is at the level required for good standing. Failure to satisfy these requirements will result in dismissal.

**Academic Dismissal:** A student on academic suspension or academic warning following suspension who does not earn a term GPA of 2.00 or higher and satisfy all other requirements associated with his or her status will be dismissed from the University. A student who has been dismissed may be readmitted only upon action of the Academic Standards Committee. Course work taken through Independent Study while under dismissal may be submitted to the committee as evidence of academic competence. If readmitted, the student may receive degree credit for such course work.

**Academic Warning Following Dismissal:** A student who enrolls subsequent to an initial dismissal and following favorable action of the Academic Standards Committee is placed on academic warning following dismissal and may take no more than 12 hours (unless more are approved by the student's adviser and dean) and must earn a term GPA of 2.00 or higher. Failure to satisfy these requirements will result in a second academic dismissal. A second dismissal is for five years, after which a student must petition for readmission to the University to the Academic Standards Committee and may also apply for Academic Bankruptcy. Individual colleges or programs have the discretion to set academic admission and continuation standards for specific programs that are higher than University standards.

## REQUIREMENTS FOR GRADUATION

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### University Core Requirements (See chart on page 40)

The University of Arkansas has adopted a "State Minimum Core" of 35 semester-credit-hours of general education courses that are required of all baccalaureate degree candidates. This is in compliance with Arkansas Act 98 of 1989 and the subsequent action of the Arkansas State Board of Higher Education. Beginning in the fall semester of 1991, all state institutions of higher education in Arkansas have a 35-hour minimum core requirement with specified hours in each of six academic areas. The University has identified those courses that meet the minimum requirement, and they are listed in the chart on page 40.

Students should consult the requirements for specific colleges and programs when choosing courses for use in the UA University Core.

### Rationale for U of A General Education Core

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

### English/Communication (6 hours)

Courses offered in this area are designed to develop the ability to organize ideas and to communicate them in grammatically correct written English with clarity, precision, and syntactical maturity. Freshman English courses taken at other universities will satisfy this requirement only if they are courses in composition. Students whose ACT scores in English are 18 or below must en-

University Core (State Minimum Core)					
Areas	Hours	University Core	Areas	Hours	University Core
English	6	ENGL 1013 Composition I ENGL 1023 Composition II	U.S. History	3	HIST 2003 History of the American People to 1877 HIST 2013 History of the American People 1877 to Present PLSC 2003 American National Government
Mathematics <sup>1</sup>	3	MATH 1203/1204 College Algebra or Any higher-level mathematics course required by major			
Science <sup>2</sup> (Students required to take corresponding lecture/lab combinations as listed.)	8	ASTR 2003/2001L Survey of the Universe ANTH 1013/1011L Biological Anthropology/Lab BIOL 1543/1541L Principles of Biology BIOL 1603/1601L Principles of Zoology BIOL 1613/1611L Plant Biology BIOL 2213/2211L Human Physiology BIOL 2443/2441L Human Anatomy CHEM 1053/1051L Chemistry in the Modern World CHEM 1074/1071L Fundamentals of Chemistry CHEM 1103/1101L University Chemistry I CHEM 1123/1121L University Chemistry II CHEM 1213/1211L Chemistry for Majors I with lab CHEM 1223/1221L Chemistry for Majors II with lab GEOL 1113/1111L General Geology GEOL 1133/1131L Environmental Geology PHYS 1023/1021L Physics and Human Affairs PHYS 1034 Phys for Elementary Ed Majors PHYS 1044 Phys for Architects I PHYS 1054 Phys for Architects II PHYS 2013/2011L College Physics I PHYS 2033/2031L College Physics II PHYS 2054 Univ Physics I PHYS 2074 Univ Physics II	Social Sciences <sup>5</sup> (Select from at least two different fields of study)	9	AGEC 1103 Principles of Agricultural Microeconomics AGEC 2103 Principles of Agricultural Macroeconomics ANTH 1023 Intro to Cultural Anthropology ECON 2013 Principles of Macroeconomics ECON 2023 Principles of Microeconomics ECON 2143 Basic Economics: Theory and Practice GEOG 1123 Human Geography GEOG 2003 World Regional Geography HESC 1403 Life Span Development HESC 2413 Family Relations HIST 1003 Institutions and Ideas of Western Civilization I HIST 1013 Institutions and Ideas of Western Civilization II HIST 1113 Institutions and Ideas of World Civilizations I HIST 1123 Institutions and Ideas of World Civilizations II HIST 2003 History of the American People to 1877 <sup>7</sup> HIST 2013 History of the American People 1877 to Present <sup>6</sup> HUMN 1114H Honors Roots of Culture to 500 C.E. HUMN 2114H Honors Birth of Modern Culture, 1600-1900 PLSC 2003 American National Government <sup>6</sup> PLSC 2013 Intro to Comparative Politics PLSC 2203 State and Local Government PSYC 2003 General Psychology RECR 2853 Leisure and Society RSOC 2603 Rural Sociology SOC 2013 General Sociology SOCI 2033 Social Problems
Fine Arts, Humanities <sup>3</sup> (Select 3 hours each from categories "a" and "b")	6	a) Fine Arts: ARCH 1003 Basic Course in the Arts: Architecture Lecture ARHS 1003 Basic Course in the Arts: Art Lecture COMM 1003 Basic Course in the Arts: Film Lecture DANC 1003 Basic Course in the Arts: Movement and Dance DRAM 1003 Theater Lecture LARC 1003 Basic Course in the Arts: The American Landscape MLIT 1003 Basic Course in the Arts: Music Lecture b) Humanities: Any intermediate I foreign language <sup>4</sup> CLST 1003 Intro Classical Studies: Greece CLST 1013 Intro Classical Studies: Rome HUMN 1124H Honors Equilibrium of Cultures, 500-1600 HUMN 2124H Honors Twentieth Century Global Culture HUMN 2003 Intro to Gender Studies PHIL 2003 Intro to Philosophy PHIL 2103 Intro to Ethics PHIL 2203 Logic PHIL 3103 Ethics and the Professions WLIT 1113 World Literature I WLIT 1123 World Literature II			

Footnotes for the State Minimum Core:

- 1 Some students majoring in math, engineering, science and business may be required to take a higher math as part of the State Minimum Core.
- 2 Some students majoring in math, engineering, science, education and health-related professions may be required to take higher or specific science courses as part of the State Minimum Core.
- 3 Some students majoring in engineering may be required to take either six hours of humanities or social sciences at the junior/senior level or substitute an additional six

- hours of higher math and/or additional science as part of the State Minimum Core.
- 4 Typically numbered 2003. See Department of World Languages, Literatures and Cultures in the J. William Fulbright College of Arts and Sciences chapter.
- 5 Some students majoring in engineering may be required to take either six hours of humanities or social sciences at the junior/senior level or substitute an additional six hours of higher math and/or additional science as part of the State Minimum Core.
- 6 If not selected to meet the three hours of the U.S. History requirement.

roll in the sequence of courses ENGL 0003, ENGL 1013, and ENGL 1023. Students whose ACT scores in English are between 19 and 27 should enroll in ENGL 1013-1023. Students with English ACT scores of 28 or above may enroll in Honors English (1013H-1023H) or regular English (1013-1023). Students with English ACT scores of 30 or above may take 1013H-1023H or elect exemption. Some programs require credit in composition, and students should confer with their advisers before choosing exemption.

#### **Fine Arts/Humanities (6 hours)**

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

#### **Mathematics (3 hours)**

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

#### **Science (8 hours)**

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

#### **Social Science (9 hours)**

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

#### **American History and Civil Government**

Under Arkansas law, no undergraduate degree may be granted to any student who has not passed a college course in American history and civil government. Courses offered by the University of Arkansas, any one of which will meet this requirement, are HIST 2003 History of the American People to 1877; HIST 2013 History of the American People, 1877 to Present; and PLSC 2003 American National Government.

#### **Advanced Composition**

Every undergraduate student at the University of Arkansas is required to take and pass ENGL 2003, a three-hour course in composition, unless exemption can be gained in one of the following ways: (1) by demonstrating a satisfactory writing ability on the Advanced Composition Exemption Examination, (2) by completing ENGL 2013 (Essay Writing), or (3) by achieving a grade of "A" or "B" in ENGL 1013 and a grade of "A" in ENGL 1023 in courses taken at the University of Arkansas, Fayetteville.

ENGL 2003 will not count as part of the total number of hours required for a degree in the College of Engineering or School of Architecture.

Students must satisfy the requirement of ENGL 1013 and ENGL 1023 and complete 30 credit hours before taking the Advanced Composition Exemption Exam. The exam must be taken before the student has acquired 96 credit hours. The English requirement applies to all transfer students regardless of non-freshman composition courses taken at other schools. Junior and senior transfer students must take the examination at the time they enter the University of Arkansas.

Students not gaining exemption from ENGL 2003 must register for the course before the last semester of their senior year.

The examination will be graded in the following categories: (1) pass or (2) fail. Students who take and do not pass the Exemption Exam must take ENGL 2003.

#### **Residence**

The full senior year must be completed in residence except that a senior who has already met the minimum residency requirement will be permitted to earn not more than 12 of the last 30 hours in extension or correspondence courses or in residence at another accredited institution granting the baccalaureate degree. No more than six of these 12 hours may be correspondence courses. The minimum residence requirement is 36 weeks and 30 semester hours. Residency for the senior year is defined as a period during which the student must be enrolled in courses offered on the campus in Fayetteville. This is intended to provide adequate contact with the University and its faculty for each student who is awarded a degree. Colleges and departments have the authority to prescribe residence requirements that exceed those described here.

#### **Minimum Credit Hours**

All students awarded a baccalaureate degree must have a minimum of 124 credit hours. Individual programs may require additional hours. Courses not marked in the course description as eligible to be repeated for degree credit may be included in this total only once.

#### **Minimum Grade-Point Average**

No student will be allowed to graduate if the student has "D" grades in more than 25 percent of all classes that are earned at this institution and that are presented to meet the requirements for a degree. No student will be allowed to graduate if that student's academic standing is other than good standing.

#### **Application for Graduation**

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

Students intending to complete requirements during the spring semester should file their applications by the priority consideration deadline published in the schedule of classes. This will help graduating students ensure they will be listed in the commencement program, considered for graduation honors, and receive priority when diplomas are mailed.

Students completing requirements during fall or summer terms must file an application by the deadlines established for those terms.

A student who fails to complete the degree during the intended semester must renew the application and pay a renewal fee for the term in which the degree requirements will be completed.

#### **Other Graduation Requirements**

Individual colleges and schools may have special graduation requirements, in addition to degree program requirements. Consult the college or school section in this catalog for statements of additional requirements.

## Degree Program Requirements

A student's degree program requirements are normally those specified in the catalog for the student's first year of enrollment. However, students may choose to meet the program requirements specified in a catalog for a later year and, under some circumstances, students may be required to meet degree program requirements incorporated into the curriculum at a level beyond that at which the student is enrolled.

Students who transfer from institutions with articulation agreements with the University may also be allowed to meet the University program requirements in effect during their first year of enrollment in those institutions, subject to the time limits described below and the availability of course work. Students who transfer to a different degree program may be required to meet the program requirements specified in the catalog for the year of entry into that program. Students who are not enrolled for a period of two years or longer may be required to reenter under program requirements in the current catalog. Students who wish to be granted a degree on the basis of requirements specified in a catalog more than seven years old may be required to petition the college or school to be allowed to do so.

Students are expected to keep themselves informed regarding program requirements and changes.

## EIGHT-SEMESTER DEGREE COMPLETION POLICY

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

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

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

A student may choose at any time to discontinue participation in the DCP without penalty. Students are encouraged to discuss such choices with an

authorized academic adviser for the program of study. Participation and subsequent withdrawal from the DCP will not jeopardize the student's opportunity to complete the degree program, to do so in a timely manner, or to complete another degree program or major by fulfilling program requirements.

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

### Requirements for Admission to the Eight-Semester Degree Completion Program (DCP):

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

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

1. Students must follow exactly the degree completion plan for the chosen major and must meet all the specified requirements in their degree plan each semester unless an alternative is approved by an authorized academic adviser for their program or unless they have already met the requirement.
2. Students must be continuously enrolled in and successfully complete at least 31-36 semester credit hours of appropriate course work each academic year as outlined in their degree completion plan.
3. Students must make satisfactory academic progress as defined by the University and degree program and must maintain the grade point average required by the University and the program of study.
4. Students must monitor their own progress in meeting the requirements identified in their degree completion plan, consistent with the program plan.
5. Students must register for classes at the first/earliest assigned time during their designated registration period each semester for the following term. For courses required for graduation, students must accept any available course or class section that does not conflict with other required courses. Students should under-

stand that special scheduling accommodations cannot be guaranteed for work or other activities including athletics and band.

Students must seek assistance from an authorized academic adviser for their chosen program of study if they are unable to identify or register for any course(s) required for that semester in their degree program. For situations in which an authorized academic adviser for the program cannot identify a required course for the student to take, the adviser must notify the department chair and dean for the student's program of study that it has not been possible for the student to complete registration for a required course for the next semester of enrollment. Notification must be made in writing immediately following the unsuccessful attempt to register. Consistent with the terms of the degree completion program, the chairperson or dean will identify an alternate course, in writing, to fulfill graduation requirements or will provide an override to allow the student to enroll in the required course(s).

Students must complete registration no later than the last official day of class for the fall or spring term preceding the next term of enrollment, unless the identification of an appropriate course to complete the student's registration is still in progress.

6. Students must have prior written approval by an authorized academic adviser before enrolling in any course at another institution (such as concurrent enrollment, enrollment during a summer term, or study abroad) if the student wishes to transfer the course and have the course included in the coursework submitted for the degree completion plan.
7. Students must confer with an authorized academic adviser for their program before withdrawing from a required course as such a withdrawal will void the DCP agreement.
8. Students must at all times maintain an accurate local address, and telephone number in official university records. Students may make changes to such information in the Student Information System Self Service component as needed and should make them immediately following any change. Students may also make changes by written notice to the Registrar.
9. Students must respond in a timely way to any official notice or message from an authorized academic adviser and to any official notice regarding registration, degree progress, financial obligations or aid, or any other university requirement.
10. Students must make timely application for all necessary financial assistance, consistent with deadlines.
11. Students must meet all University degree requirements (including formal application for graduation consistent with deadlines and requirements as established by the Registrar for the semester in which the student is scheduled for graduation).

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

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

#### **Appeal Process**

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

#### **GRADUATION RATES**

In accordance with the Student Right-To-Know and Campus Security Act of 1990, the following is a summary of the institution's six-year graduation rates:

<b>Fall 2002 Graduating, Bachelor, Degree-Seeking Freshmen</b>			
	<b>Men</b>	<b>Women</b>	<b>Overall</b>
Total Graduates	572	652	1,224
Percent of Total	55%	59%	57%
<b>Fall 2000 Graduating Student Athletes Who Received Athletically Related Aid</b>			
Percent of Total:	31%	67%	49%

#### **TRANSFER OF CREDIT**

The following policies control the granting of credit for course work taken at other institutions:

1. Transfer credits are subject to a two-stage evaluation process. First, the eligibility of the hours for transfer is evaluated by the Registrar's Office based upon decisions of appropriate faculty or using the Arkansas Course Transfer System (ACTS). Credits found to be eligible for general transfer may not always count toward the minimum requirements for a degree at the University of Arkansas. The second step in the evaluation, performed by the academic dean's office or department responsible for the program of study, determines which hours evaluated will satisfy degree program requirements.
2. Grades earned at other institutions are not calculated in the student's grade-point average earned at the University.
3. General transfer credit is awarded for courses in which a grade of "C" or higher has been earned. Course work must be applicable to a baccalaureate degree; credit is not granted for course work that is remedial or technical in nature.
4. Students can petition to have up to six hours of "D" grades transfer for degree credit to the University of Arkansas. Students must have a 2.00 GPA on a 4.00 scale to be considered, and courses must meet core or elective requirements in the student's degree program. Courses outside the degree program and courses in the major cannot be considered for transfer. The Third Level Administrative Review Committee makes all decisions regarding "D" transfers. Petitions can be obtained from the Registrar's Office.
5. In the case of course work taken at institutions not fully accredited by a regional accrediting agency, transfer credit may be denied altogether or may be granted provisionally subject to successful

completion of specified courses at the University. Normally, credit is provisionally granted only if the institution is a candidate for regional accreditation.

6. No more than 68 semester hours of lower-division (freshman- or sophomore-level) course work will be accepted. There is no limit placed upon the number of upper-division (junior- or senior-level) credit hours that may be awarded in general transfer, but a student must complete at least 30 hours in residence to meet graduation requirements (see Requirements for Graduation in this catalog). Please also refer to the appropriate college section of this catalog for any additional transfer policies that may be specific to your anticipated degree program.
7. The State Minimum Core (SMC): Act 98 of 1989 requires each institution of higher learning in Arkansas to identify a minimum core of general education courses that shall be fully transferable between state-supported institutions. Under guidelines from the State Board of Higher Education, the SMC consists of 35 hours distributed among the following education areas: English, U.S. history or government, mathematics, science, fine arts and humanities, and social sciences. Students transferring credit with grades of "C" or better from the approved SMC of another state-supported institution in Arkansas may expect to have all these hours applied toward their degree at the University of Arkansas. However, each college at the University of Arkansas reserves the right to set additional general education or core requirements above and beyond those in a particular 35-hour SMC, however. The evaluation of transfer credit performed by the receiving college dean's office will determine the extent to which courses transferred as part of a SMC will satisfy degree requirements.

Students should be prepared to submit course descriptions and syllabi of transfer work if there is any question concerning acceptance of credit toward a degree program. The University reserves the right to revise credit for advanced standing after the student has been in residence.

Please refer to the appropriate college or school section of this catalog for additional information concerning acceptance into specific degree programs.

### Arkansas Course Transfer System (ACTS)

The Arkansas Course Transfer System (ACTS) contains information about the transferability of courses within Arkansas public colleges and universities. Students are guaranteed the transfer of applicable credits and the equitable treatment in the application of credits for the admissions and degree requirements. Course transferability is not guaranteed for courses listed in ACTS as No Comparable Course. Additionally, courses with a D frequently do not transfer and institutional policies may vary. ACTS may be accessed on the Internet by going to the ADHE Web site at <http://adhe.edu/> and selecting Course Transfer.

### Military Transfer Credit

The University of Arkansas accepts transfer credit based upon completed military training as evaluated by the American Council of Education (ACE) guidelines and recommendations. The evaluation must be presented to the University on an official transcript from ACE. Equivalencies for military credit as recommended by ACE are evaluated by departmental faculty and may not be exactly the same as ACE. University of Arkansas equivalencies for ACE credit are displayed on the web site of the Registrar's Office in the Transfer Credit section. Students may elect to receive 6 hours of general military science credit for basic training as evaluated by presentation of the military DD214. Officer training would qualify the student for 6 additional hours of general

military science credit. The same training may not be presented for both general military science credit and ACE credit.

## GRADUATION HONORS

The faculty of each college will recommend for graduation with honors or with high honors those students it considers to be eligible for such distinction under its own regulations with the following general restrictions:

1. To be eligible for graduation honors a student must have completed at least one-half of his or her degree work at the University of Arkansas.
2. No student shall be eligible for graduation honors whose cumulative grade-point average is below 3.125.
3. A college should not recommend more than 10 percent of its graduating class for graduation honors except under unusual circumstances.
4. It is recommended that in determining graduation honors the faculty consider the whole of a student's record but give greater weight to the last half of the record than to the first half.

## ADDITIONAL BACHELOR'S DEGREE

A person with a bachelor's degree from the University of Arkansas, or from any other institution, may not receive another bachelor's degree without completing in residence at least 30 hours of additional, not necessarily subsequent, courses selected from the courses leading to a degree for which the person is a candidate.

More than 30 hours of course work may be required. In addition to the college or school requirements, the candidate must also meet all University requirements as stated in the catalog, including graduation and core requirements, except when course work for the first degree satisfies requirements for the second.

## ANNUAL NOTICE OF STUDENT RIGHTS UNDER THE FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA)

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. They are as follows:

1. The right to inspect and review the student's education records, with some exceptions under the Act, within 45 days of the day the University receives a request for access. Students should submit to the Registrar's Office written requests that identify the record(s) they wish to inspect. The appendix to University-wide Administrative Memorandum 515.1 provides a list of the types and locations of education records, the custodian of those records, and copying fees for each individual campus. The University official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the University official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.
2. The right to request the amendment of the student's education records that the student believes are inaccurate or misleading. Students should write the University official responsible for the

record, clearly identify the part of the record they want changed, and specify why it is inaccurate or misleading. A sample form, which may be used in making this request, is contained in the appendix to University-wide Administrative Memorandum 515.1.

If the University decides not to amend the record as requested by the student, the University will notify the student of the decision and advise the student of his or her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing and is also contained in the University-wide Administrative Memorandum 515.1.

3. The right to withhold consent of disclosure of directory information, defined as the following information: the student's name; address; telephone number; date and place of birth; religious preference; major field of study; classification by year; number of hours in which enrolled and number completed; parents' or spouse's names and addresses; marital status; participation in officially recognized activities and sports; weight and height of members of athletic teams; dates of attendance including matriculation and withdrawal dates; degrees, scholarships, honors, and awards received, including type and date granted; most recent previous education agency or institution attended; and photograph.

This information will be subject to public disclosure unless the student informs the Registrar's Office in writing each semester that he or she does not want his information designated as directory information. To prevent publication of name in the printed student directory, written notice must reach the Registrar's Office by August 31 of the fall semester.

4. The right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent.

One exception, which permits disclosure without consent, is disclosure to school officials with legitimate educational interests. A school official is a person employed by the University in an administrative, supervisory, academic or research, or support staff position (including law enforcement unit personnel and health staff); a person or company with whom the University has contracted (such as an attorney, auditor, or collection agent); a person serving on the Board of Trustees; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks. A school official has a legitimate educational interest if the official needs to review an educational record to fulfill his or her professional responsibility.

Upon request, the University also discloses education records without consent to officials for another school in which a student seeks or intends to enroll.

5. The right to file a complaint with the U.S. Department of Education concerning alleged failures by the University to comply with the requirements of FERPA. The name and address of the office that administers FERPA is as follows:

Family Policy Compliance Office  
U.S. Department of Education  
400 Maryland Avenue, SW  
Washington DC 20202-4605

6. University-wide Administrative Memorandum 515.1 is available on request in the main library on campus.

## PHOTOGRAPHIC AND VIDEO IMAGES

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The University is proud to publish and display photographic and video images of UA students, their activities and accomplishments. Any student who does not wish to be represented in such photographic and video images by the University should choose to withhold photos on the FERPA option on the University's student information system.

## WAIVER OF ACADEMIC POLICIES

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The Academic Standards Committee, composed of faculty and students, serves as a referral body for matters of probation, suspension, dismissal, and other rules and regulations related to academic progress and graduation. Petitions for waiver of academic rules and information on the petitioning process may be obtained on the Registrar's Office Web site or at the offices of the academic deans or the Registrar. Petitioners should note petitioning deadlines.

## STUDENT ACADEMIC APPEALS AND COMPLAINTS

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Students are first encouraged to resolve academic conflicts and complaints informally through their department or through the assistance of the Office of Student Mediation and Conflict Resolution, which can provide objective and confidential mediation. If an informal resolution cannot be reached there are two kinds of procedures for undergraduate students to pursue with complaints of an academic nature. Refer to the Student Handbook for appeals structures for other grievances.

### Grade Appeal Structure for Undergraduate Students

If a student questions the fairness or accuracy of a grade, there is recourse through a student grade appeal structure. Disagreements shall be heard that allege the instructor's policy was not applied consistently to all students, differed substantially from the announced policy, or that a policy was not announced. All grievances concerning course grades must be filed within one calendar year of the end of the term in which the grade that is being appealed was assigned. The procedures are:

1. The student should first discuss the matter with the instructor involved, doing so as soon as possible after receiving the grade. The instructor should be willing to listen, to provide explanation, and to be receptive to changing the grade if the student provides convincing argument for doing so. The student's questions may be answered satisfactorily during this discussion.
2. If the student chooses to pursue the grievance, the student shall take the appeal in written form to the appropriate department chairperson. That person, if she or he believes the complaint may have merit, will discuss it with the instructor.
3. If the matter remains unresolved, it will be referred to an ad hoc committee composed of the entire faculty of the instructor's department. The committee will examine available written information on the dispute, will be available for meetings with the student and with the instructor, and will meet with others as it sees fit.
4. If the faculty committee, through its inquiries and deliberations, determines that the grade should be changed, it will request that the instructor make the change and provide the instructor with a written explanation. Should the instructor decline, he or she must provide an explanation for refusing.
5. If the faculty committee, after considering the instructor's explanation,



tion, concludes it would be unjust to allow the original grade to stand, it may then recommend to the department chairperson that the grade be changed. That individual will provide the instructor with a copy of the recommendation and will ask the instructor to implement it. If the instructor continues to decline, the chairperson is then obligated to change the grade, notifying the instructor and the student of this action. Only the chairperson has the authority to effect a grade change over the objection of the instructor who assigned the original grade, and only after the foregoing procedures have been followed. If the faculty committee determines that the grade should not be changed, it should communicate this conclusion to the student, the faculty member, and the chair.

### Student Complaint Procedure

This procedure is designed to give all students a means by which an academically related complaint against an instructor other than that which is solely concerned with a grade (covered by the previous section) may be reviewed and acted upon in such a way as to protect the rights of both the student and the instructor. The procedure must be initiated within one calendar year of the occurrence of the cause for the complaint.

*Guidelines:* All committee discussions or hearings shall be private. Furthermore, every effort shall be made to protect any person against discrimination as a result of statements or actions made in this procedure, but fraudulent or intentionally deceptive statements and/or allegations shall be considered an extremely serious violation of the procedures and could result in a recommendation for grave disciplinary measures. Nothing in this procedure may violate policies stated under "Appointments, Promotions, Tenure, Non-reappointment, and Dismissals" in the Faculty Handbook.

*Definitions of Terms:* **Student** – Under this procedure, a student is any person who has been formally admitted to the University of Arkansas and who is or was enrolled as an undergraduate student at the time the alleged grievance occurred. (A separate procedure exists for graduate students.) **Decision** – A decision will include a review of the issues, a determination about the validity of the complaint, the reasons for the determination, and any recommendations. A decision will be stated in writing. **Working Days** – Working days refers to Monday through Friday, excluding official University holidays.

*Procedures:* The normal course for a student or a group of students with an academically related complaint concerning an instructor is to go first to that instructor, although the student or group may appeal to the instructor's chairperson, supervisor, or dean in an attempt to resolve the problem informally and amicably. However, if a student has a complaint regarding academic concerns not covered under the "Academic Appeal Structure" and, for whatever reason, does not wish or is unable to resolve the issue informally, the student is entitled to have the issue considered under the following normal procedures.

1. The student will submit a written complaint with supporting information to the Vice Chair of the Campus Council or to the Chair of the Student Panel or to the Chair of the Faculty Panel (as described in item 4 below). These three persons will comprise a Contact Committee, with the Vice Chair of the Campus Council as coordinator, and will be responsible for the initial review of the student's complaint. If the Contact Committee, without any preliminary investigation, agrees unanimously that a particular complaint is not subject to these procedures or should not be pursued, the student will be notified in writing. No further action will be taken under these procedures unless the student files within five working days a written request for a preliminary investigation by the Contact Committee or for an investigation by a Hearing Committee; this request will be honored, and the instructor shall be informed immediately about the filing of the complaint,

the nature of the complaint, and the initiation of the investigation. Deliberate and cautious discretion will be used to preserve a student's anonymity (if possible, depending upon the nature of the complaint) and to protect the faculty member from presumptive suspicion.

2. If, through lack of unanimous agreement or as a result of the student's request, the Contact Committee pursues the complaint, the Committee will initiate the preliminary investigation. The preliminary investigation should be completed within 15 working days, if possible, from the date the request is received. After the investigation, the Contact Committee has a choice of two alternatives:
  - a. It will make a determination regarding the complaint and will notify in writing both parties; or
  - b. It will determine that a Hearing Committee should be appointed and that a more thorough investigation should be conducted. Both parties will be advised of this determination and of who has been appointed to serve on the Hearing Committee.
3. If the Contact Committee has made a determination regarding resolution of the complaint and if either party is not satisfied with this determination, that party has a prerogative of requesting and having a Hearing Committee appointed to investigate the matter further.
4. Members of a Hearing Committee will be selected from two panels of 15 persons each: one of students, chosen by ASG; and one of faculty members, chosen by the Faculty Committee on Committees. The Chair of the Student Panel will be selected by the ASG President, and the Chair of the Faculty Panel will be selected by the Chair of the Campus Faculty.
5. When an investigation by a Hearing Committee becomes necessary, the Committee will be appointed immediately by the Contact Committee. The Hearing Committee will be composed of three students and of four faculty members, chosen to avoid obvious bias or partiality. The coordinator of the Contact Committee will call the initial meeting of the Hearing Committee to conduct an election of a chairperson from among the four faculty members and to review general information and results of any preliminary investigation.
6. Either party to the dispute may ask another member of the University community to attend the hearings and may ask any member of the University community to provide relevant information. At the end of its investigation, which, if possible, should be completed within 20 working days after its first meeting, the Hearing Committee will submit its decision to both parties.
7. If the decision is not acceptable to either the student or the instructor, that person may appeal in writing to the Provost/Vice Chancellor of Academic Affairs of the University. The Provost will review the Hearing Committee's written report and will forward a written recommendation to the student, the instructor, and the Chairperson of the Hearing Committee.

## ADVANCED-STANDING PROGRAMS

### Credit by Examination

There are two ways a student enrolled at the University of Arkansas, Fayetteville, may establish undergraduate credit by examination in courses offered by the University: either through the University of Arkansas Credit by Examination Program (see the next section), or through approved na-

tional testing programs, such as the College Level Examination Program (CLEP), the Advanced Placement Program (AP), or the International Baccalaureate Program (IB).

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

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

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

**University of Arkansas Program**

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

1. The student must apply for such examination using forms available in the academic dean or department office. Permission to take the examination must be obtained from the faculty of the

department offering the course. The faculty of each department is responsible for designating the courses in that department that may be challenged by examination.

2. The appropriate department or college offering the course will designate and administer the examination.
3. A passing grade on the examination must be “B” or above. A second trial for credit by examination in that course will not be permitted.
4. A \$25 credit by examination fee will be assessed per course.

**National Testing Programs**

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

Credit is awarded on the basis of official score reports, which must be sent by the national testing service directly to the Registrar’s Office, 146 Silas H. Hunt Hall, University of Arkansas, Fayetteville, AR 72701. Credit also may be awarded on the basis of scores posted on an official university or college transcript, provided the type of examination is included. In all cases, minimum score requirements as established by the University of Arkansas, Fayetteville, must be met.

Approval has been granted to award credit for the following national testing programs:

COLLEGE LEVEL EXAMINATION PROGRAM (CLEP)				
CLEP Examination	UA Course	Minimum Score for Credit		Maximum Credit Allowed
		Paper-based test (pre July 2001)	Computer-based test (Effective July 2001)	
<b>General Examinations</b>				
College Mathematics	MATH 0003	520	52	3
English Composition <sup>1</sup>	ENGL 1013	490	55	3
	ENGL 1013 & ENGL 1023	540	65	6
<b>Approved Subject Examinations</b>				
American Government	PLSC 2003	47	50	3
Biology	BIOL 1543/1541L	49	50	4
Calculus	MATH 2554	55	65	4
College Algebra	MATH 1203	50	54	3
Freshman College Composition <sup>2</sup>	ENGL 1013	52 + acceptable essay	57 + acceptable essay	3
	ENGL 1013 & ENGL 1023	62 + acceptable essay	66 + acceptable essay	6
Chemistry	CHEM 1103/1101L & CHEM 1123/1121L	50	55	8
History of United States I	HIST 2003	50	50	3
History of United States II	HIST 2013	50	50	3
Human Growth & Development	HESC 1403		63	3
Introduction to Educational Psychology	PSYC 4033		55	3
Introductory Psychology	PSYC 2003	47	55	3
Introductory Sociology	SOCI 2013	59	59	3
Principles of Macroeconomics	ECON 2013	48	54	3
Principles of Microeconomics	ECON 2023	48	54	3
Principles of Marketing	MKTG 3433	48	50	3
Western Civilization I	HIST 1003	50	60	3
Western Civilization II	HIST 1013	50	60	3

1 The University accepts both the 90-minute multiple-choice test and the 90-minute test, which includes a 45-minute multiple-choice section and a 45-minute essay section.

2 Essay required. Numerical scores by themselves will not suffice for credit, nor will they guarantee credit.

ADVANCED PLACEMENT PROGRAM (AP)					
AP Examination	UA Course	Minimum Score	AP Examination	UA Course	Minimum Score
Art History	ARHS 1003	3C	Human Geography	GEOG 1123	4C
	ARHS 1003H or ARHS 2913	4C	Latin: Virgil	LATN 1013	2 Pq, 3C
	ARHS 1003H or ARHS 2913 & ARHS 2923	5C		LATN 2003	4C <sup>3</sup>
Biology	BIOL 1543H/1541M	3P		LATN 2013	5C <sup>3</sup>
	BIOL 1543/1541L	4C	Latin: Literature	LATN 1013	2 Pq, 3C
	BIOL 1543H/1541M	5C		LATN 2003	4C <sup>3</sup>
Calculus AB	MATH 2554	3C 4C	Macroeconomics	ECON 2013	4C 5C
	MATH 2554H	5C	Microeconomics	ECON 2023	4C 5C
Calculus BC	MATH 2554 & MATH 2564	3C 4C	Music Theory	MUTH 1603 & MUTH 1621	2P, 3Cq, 4C
	MATH 2554H & MATH 2564H	5C		MUTH 1003	2Cq, 3C
AB Subscore	MATH 2554	4C		MUTH 1631 & MUTH 2603	4Cq, 5C
			Physics B	PHYS 2013/2011L & PHYS 2033/2031L	3C
Chemistry	CHEM 1103/1101L & CHEM 1123/1121L	4C	Physics B with Calculus AB or BC score of 3	PHYS 2054/2050L PHYS 2033/2031L PHYS 2054H/2050M PHYS 2033/2031L	3 Cq <sup>3</sup> , 4C 5C
	CHEM 1103/1101L & CHEM 1123H/1121M	5C	Physics C Mechanics	PHYS 2054	3 Cq <sup>(2,3)</sup> , 4C
Literature or English	ENGL 1023 ENGL 1023 ENGL 1023H	3E 4C 5C	Physics C, E & M	PHYS 2074	3 Cq <sup>2</sup> , 4C
	ENGL 1013 ENGL 1013 ENGL 1013H	3E 4C 5C	Psychology	PSYC 2003	3C
Language and Composition	ENGL 1013 ENGL 1013 ENGL 1013H	3E 4C 5C		PSYC 2003H	5C
	ENSC 1003	3C	Spanish Language	SPAN 1013 & 2003	3C
Environmental Sciences	ENSC 1003	3C		SPAN 1013, 2003 & 2013	4C
European History	HIST 1013	3C		SPAN 1013, 2003, 2013, & 3003	5C
French Language	FREN 1013 & 2003	3C	Spanish Literature	SPAN 3103	5C
	FREN 1013, 2003 & 2013	4C	Statistics	STAT 2303	3C <sup>4</sup>
French Literature	FREN 1013, 2003, 2013, & 3003	5C		STAT 2023	4C
	FREN 3103	5C	Studio Art: Drawing	ARTS 1003	3C
German Language	GERM 1013 & 2003	3C		ARTS 1003 or ARTS 1013	5C
	GERM 1013, 2003 & 2013	4C	Studio Art: 2D Design	ARTS 1003	3C
Government and Politics: Comparative	PLSC 2013	3C		ARTS 1003 or ARTS 1313	5C
	PLSC 2003 PLSC 2003H	3C 5C	Studio Art: 3D Design	ARTS 1003	3C
Government and Politics: U.S.				ARTS 1003 or ARTS 1323	5C
			U.S. History	HIST 2003 or HIST 2013	3C
				HIST 2003 & HIST 2013	4C
			World History	HIST 1123	4C
				HIST 1123H	5C

Symbols for placement and credit: P = placement; Pq = qualified placement (student may be placed in an advanced course, with credit awarded for prerequisite courses upon satisfactory completion, subject to departmental review.); C = credit; Cq = qualified credit (placement and credit subject to departmental review).

<sup>1</sup> Credit will be awarded upon satisfactory completion of a junior or senior-level economic course.

<sup>2</sup> Students must pass a departmental test to receive credit.

<sup>3</sup> To receive credit for courses preceding the course for which AP credit has been granted, students must enroll in and complete with a grade of "C" or higher, that course which follows in sequence the course for which AP credit was granted.

<sup>4</sup> At most, 3 hours credit allowed for AP Statistics.

### College Level Examination Program (CLEP)

The University of Arkansas is a CLEP testing center and is authorized to administer CLEP examinations both on a national basis and on an institutional basis. However, CLEP examinations may be taken at scheduled times at any national test center, and the results sent to the University of Arkansas. The test center code number and score recipient code number for the University of Arkansas is 6866. For information or to make application, write Testing Services, 713 Hotz Hall, University of Arkansas, Fayetteville, AR 72701, or telephone 479-575-3948.

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

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

### Advanced Placement Program (AP) – see courses on page 48

The Advanced Placement (AP) Program of the College Entrance Examination Board gives students the opportunity to pursue college-level studies while still in high school and, with an appropriate score on an AP exam, to receive advanced placement and/or credit upon entering the University. The AP examinations are offered annually by high schools that participate in this program. The appropriate UA governing body, upon recommendation of the academic department, has authorized credit and/or placement for students who present qualifying scores in the AP courses listed on page 48.

### International Baccalaureate Program (IB)

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

The IB examinations are offered annually, usually in May, by high schools participating in this program. Students seeking credit for examinations must request that a final, official IB transcript of certificate or diploma results be sent by mail to the Registrar's Office, 146 Silas H. Hunt Hall, University of

Arkansas, Fayetteville AR 72701. These materials may be requested from International Baccalaureate North America, 200 Madison Avenue, Suite 2007, New York, NY 10016, telephone: 212-696-4464.

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

INTERNATIONAL BACCALAUREATE (IB)		
International Course	UA Course	Score (Higher Level)
Anthropology	ANTH 1023	4-7 HL
Biology	BIOL 1543/1541L BIOL 1543H/1541M	4,5 HL 6,7 HL
Chemistry	CHEM 1103/1101L & CHEM 1123/1121L	5-7 HL
Computer Science	CSCE 2013 & CSCE 3143 Pending departmental examination	4-7 HL
Economics	ECON 2013 & ECON 2023	5-7 HL
English	ENGL 1013 ENGL 1023	5-7 HL 6,7 HL
Geography	GEOG 1123	5-7 HL
History (U.S.)	HIST 2003 or 2013 HIST 2003 & 2013	4 HL 5-7 HL
History (World)	HIST 1003 & 1013 HIST 1113H & 1123H	4,5 HL 6,7 HL
Mathematics	Up to 8 hours possible (To be determined by the Math Department)	5-7 HL
Philosophy	PHIL 2003 PHIL 2003H	4,5 HL 6,7 HL
Physics	PHYS 2013/2011L & PHYS 2033/2031L PHYS 2054 & PHYS 2033/2031L	4,5 HL 6,7 HL
Psychology	PSYC 2003	4-7 HL

# Academic Facilities and Resources

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## UNIVERSITY LIBRARIES

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

- The Robert A. and Vivian Young Law Library
- The Fine Arts Library
- The Chemistry and Biochemistry Library
- The Physics Library.

The spacious Helen Robson Walton Reading Room is the Libraries' most popular quiet study area, and group study rooms are also available. More than 200 reference databases and thousands of electronic journals are accessible from anywhere with a University ID. Reference librarians assist users in locating and using library resources. Students may send questions by e-mail, telephone, or 24/7 chat, and can schedule a one-on-one session with a librarian for more extensive research questions. Reference librarians also conduct orientation sessions on research methods throughout the semester. Students may also visit the tutors from the Quality Writing Center and the Enhanced Learning Center on site in Mullins Library Sunday through Thursday. With more than 1.7 million volumes and 15,000 journal subscriptions, students will find plenty of research material for every subject. Other resources in the collections include several thousand maps, manuscripts, and more than 27,000 audio and visual materials, including music scores, recordings, and movies, that you can hear or view in the Performing Arts and Media Department.

A full-service computer Research Commons is located on the lobby level of Mullins, and students may check out a laptop and log onto the Internet from anywhere in the library using wireless access technology. Visit the Libraries' Web page at <http://libinfo.uark.edu> to learn more about services and collections or access the My Library function that allows users to check library records, renew books, request holds and save catalog searches. Items not owned by the University Libraries may be obtained through interlibrary loan by completing the online registration and request forms. Requested items in electronic format will be sent directly to desktops, usually within 24 hours; physical items will be held for pickup at the main service desk on the Lobby Level.

The University Libraries have had official United States government depository status since 1907. The Federal Depository Library Program provides free public access to U.S. government information by distributing information products from Federal agencies to depository libraries throughout the nation. The Government Documents Department has also been a depository for Arkansas state publications since 1993. The University Libraries' map collection and GIS (Geographic Information Systems) program, including a public GIS

workstation equipped with ArcGIS Desktop Suite, are available.

In Special Collections, students can read rare books from around the world, consult the largest book collection related to Arkansas, handle historic letters and diaries, magazines, and old photographs related to Arkansas, as well as watch old black and white films made in or about the state. Through the Libraries' Pryor Center for Arkansas Oral and Visual History, students also have access to hundreds of original oral history interviews conducted with Arkansans from all walks of life.

For information concerning collections and services, please inquire at 479-575-4104. For any other library matter, please contact the Dean's Office at 479-575-6702.

## QUALITY WRITING CENTER

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The Quality Writing Center provides one-on-one tutorials for students, faculty, and staff who want to improve their writing. Clients make appointments via the center's Web-based scheduling system for face-to-face or online tutorials.

Graduate tutors of the Quality Writing Center, who help clients with any writing project, work in Kimpel Hall, Gregson Hall and Mullins Library. The center also has a staff of undergraduate peer tutors trained to assist students with freshman composition assignments. Peer tutors are available for walk-in tutoring, days and evenings in the same locations.

Quality Writing Center tutors take a non-directive approach, allowing students to maintain ownership of their writing and to control the important editorial decisions that improve their drafts. The tutors provide assistance to students at any stage of the writing process: brainstorming, pre-writing, outlining, rough-drafting, and revising.

The center's Web site at <http://www.uark.edu/write> has 40 downloadable handouts covering a wide variety of composition and grammar issues. Online tutoring is available during holiday and term breaks.

## COMPUTING FACILITIES AND RESOURCES

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University Information Technology Services supports research, academic and administrative computing activity on the UA campus. Computer operations are maintained to provide access to computing facilities and resources 24-hours a day, seven days a week.

A variety of host systems and servers are available for academic use. The primary mail and messaging server on campus is [mail.uark.edu](mailto:mail.uark.edu). E-mail is browser-based and can be checked from any computer with an Internet connection by

going to <http://uamail.uark.edu/> or <http://mail.uark.edu>. In addition, users can choose to use e-mail clients such as Outlook, Eudora, Pine, Thunderbird, and Mac OSX Mail, all of which are supported. Microsoft Exchange services are available to faculty and staff (e-mail, calendaring, project management) on Web version for [exchange.uark.edu](http://exchange.uark.edu), Outlook 2007, or Entourage 2008. The primary server for academic and research computing is [comp.uark.edu](http://comp.uark.edu), a Sun Fire E2900 server, using the Unix operating system Solaris. Comp supports statistical packages (SAS, SPSS, MATLAB), programming languages (C, C++, FORTRAN), e-mail software (Pine), and other Internet applications. Personal home pages may also be developed on the comp server. All students are automatically assigned UARK accounts (e-mail username and password) on [mail.uark.edu](http://mail.uark.edu), [comp.uark.edu](http://comp.uark.edu) and may use their e-mail username and password to access other student-related applications such as ISIS and logging in to the General Access Computing Labs.

A variety of other servers provide support for administrative and academic computing. These include an IBM z890 mainframe for administrative computing for human resources and business processing systems. Other servers provide support for data warehousing; Web services, allowing them to access PC and Mac-based software through these servers. Additionally, the General Access Computing Labs maintain software via networked servers, allowing access to the same products in multiple labs. Faculty may also access the administrative computing systems for advising purposes, roster generation, and grade reporting. Host peripherals include disk storage, tape systems, and laser printing.

UARKnet, the campus backbone network, is managed by University IT Services. This network enables communication among networks, computers, and servers on campus, as well as on the Internet and Internet2, of which the University is a member site. The University is also on the ground floor of ARE-ON, considered the highest speed research network in the nation. Virtually all departments, as well as all laboratories, are connected to the campus network. Network access is also available via dial-up modem connections. Dial-up access ID and passwords are the same as e-mail IDs and passwords that students use to gain access to other systems.

The General Access Computer Labs offer approximately 300 network-attached PC and Mac computers for use by UA students, faculty, and staff. These labs are located in the Arkansas Union, Administrative Services Building, Mullins Library, and in the Northwest Quad. The labs offer day, evening, and weekend hours. In addition to being Internet-connected, a variety of products are installed on these machines, including Internet browsers, word processors (MS Word and WordPerfect), databases (MS Access), and spreadsheet programs (MS Excel). Laser printing is available from all supported software. Scanning facilities are available in the Administrative Services Building and the Arkansas Union labs, and color printing is available in the Union. Laptops are available for checkout in Mullins Library, the J.B. Hunt Transport Services Center, and the Student Technology Center, located in the Arkansas Union. These laptops can be used standalone or with network access via the wireless network available campuswide. Personal laptops may also connect to the network through public drops located in Mullins and the Union, as well as through the campus wireless network.

University IT Services offers free, non-credit training workshops every month on a variety of computer and Internet-based topics, including operating systems, e-mail, word processing, Windows SharePoint, Web page development, presentation tools, and many others. Students can also refer to the University IT Services Web site for a more comprehensive list of training workshops. Training by request is also available.

The Student Technology Center, provided by the Student Technology Fee and University IT Services, is a walk-in computing help center offering laptops and projectors for checkout, as well as high-end multimedia direction and assistance. Laptops are configured for wireless Internet access,

and carrels are available with desktop computers. Laptops and desktops are loaded with advanced, multimedia software for layout, graphics design, and Web site development, which students can learn to use with assistance from staff at the Student Technology Center.

The MultiMedia Resource Center (MMRC) provides access to and training for computers and applications that can be used to develop programs and classroom presentations. In addition, the MMRC features a training lab, including Internet-connected computers equipped for video conferences and distance education applications. The MMRC also has presentation equipment and a portable IP-based video-conferencing unit available for checkout. The Research Data Center provides researchers with assistance in data design and analysis and with support for other needs, such as training and access to numeric data and assistance in using Web-based data and analyzing survey results. Furthermore, faculty can refer students to the MMRC to learn high-end computing techniques, such as podcasting, video presentation, and much more.

University IT Services is located in the Administrative Services Building (ADSB), 155 Razorback Road. University IT Service specialists offer assistance with operating systems, application programs, virus scanning, modem communications, Internet tools, research projects, general troubleshooting, and more. For more information, phone the UITTS Help Desk at 479-575-2905, from 7 a.m. to 6 p.m. Monday-Thursday, and until 5 p.m. Friday, or visit the University IT Web site at <http://uits.uark.edu/>.

## TESTING SERVICES

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Testing Services is charged with the responsibility of administering standardized academic tests at the University of Arkansas. The office administers such national tests as the ACT Assessment, the Law School Admission Test (LSAT), the Graduate Management Admission Test (GMAT), the Graduate Record Examination (GRE), and CLEP exams in addition to others throughout the year. National testing companies determine testing dates and deadlines. Testing Services also offers a number of institutional tests such as the Test of English as a Foreign Language (TOEFL), the Spoken Language Proficiency Test (SLPT), and the Math Placement Test. These tests are scheduled at various times as demand dictates. Test fees vary depending on the test.

To obtain a registration bulletin or information about exam dates and deadlines, please stop by 700 Hotz Hall or call 479-575-3948.

# University Centers and Research Units

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Research programs are the means by which the University contributes to the generation as well as to the preservation and dissemination of knowledge. With nationally recognized programs in many areas and funding from government, industry, and other private sources, the research effort of the University is strong and diversified. Among the many advantages of attending the University of Arkansas is the accessibility of faculty members and their enthusiasm for including undergraduates in the research process. Such collaboration can enhance students' educational experiences by providing practical training in research and lab techniques, by engaging students in the subject or process they're studying, and by fostering a mentoring relationship between faculty and student researchers. It is not uncommon for students to contribute significant and meaningful insights to their field of study through the research process.

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

## **AGRICULTURAL EXPERIMENT STATION**

<http://aes.uark.edu/>  
Richard A. Roeder, associate director  
AFLS E108  
479-575-2120

## **ARKANSAS ARCHEOLOGICAL SURVEY**

<http://www.uark.edu/campus-resources/archinfo/>  
Thomas Green, director  
ARAS 147  
479-575-3556  
[archinfo@cavern.uark.edu](mailto:archinfo@cavern.uark.edu)

## **ARKANSAS CENTER FOR SPACE AND PLANETARY SCIENCES**

<http://spacecenter.uark.edu/>  
Derek Sears, director  
MUSE 202  
479-575-7625  
[csaps@uark.edu](mailto:csaps@uark.edu)

## **ARKANSAS COOPERATIVE FISH AND WILDLIFE RESEARCH UNIT**

<http://biscweb.uark.edu/Coop/home/coophome.htm>  
David Krementz, unit leader  
SCEN 632  
479-575-6709  
[coopunit@uark.edu](mailto:coopunit@uark.edu)

## **ARKANSAS LEADERSHIP ACADEMY**

<http://www.arkansasleadershipacademy.org/>  
Beverly Elliott, director  
WAAX 300  
479-575-3030

## **ARKANSAS WATER RESOURCES CENTER**

<http://www.uark.edu/depts/awrc/>  
Ralph K. Davis, director  
OZAR 112  
479-575-4403  
[awrc@uark.edu](mailto:awrc@uark.edu)

## **BESSIE BOEHM MOORE CENTER FOR ECONOMIC EDUCATION**

<http://bmcee.uark.edu>  
Rita Littrell, director  
RCED 217  
479-575-2855

## **CENTER FOR ADVANCED SPATIAL TECHNOLOGIES**

<http://cast.uark.edu/>  
Fred Limp, director  
OZAR 12  
479-575-6159  
[info@cast.uark.edu](mailto:info@cast.uark.edu)

## **CENTER FOR ARKANSAS AND REGIONAL STUDIES**

<http://www.uark.edu/misc/carsinfo/>  
Robert Cochran, director  
MAIN 506  
479-575-7708

**CENTER FOR BUSINESS AND ECONOMIC RESEARCH**

<http://cber.uark.edu/>  
 Kathy Deck, director  
 WJWH 545  
 479-575-4151  
 cberinfo@cavern.uark.edu.

**CENTER FOR COMMUNICATION AND MEDIA RESEARCH**

[http://www.uark.edu/depts/comm/Center\\_for\\_Communication\\_and\\_Media\\_Research.html](http://www.uark.edu/depts/comm/Center_for_Communication_and_Media_Research.html)  
 Robert H. Wicks, director  
 KIMP 417  
 479-575-3046  
 rwick@uark.edu

**CENTER FOR ENGINEERING LOGISTICS AND DISTRIBUTION**

<http://celdi.ineg.uark.edu/>  
 John R. English, executive director  
 BELL 4207  
 479-575-2124

**CENTER FOR MANAGEMENT AND EXECUTIVE EDUCATION**

<http://cmed.uark.edu/>  
 Therese Steifer, director  
 RCED 140  
 479-575-2856  
 cmed@walton.uark.edu

**CENTER FOR MATHEMATICS AND SCIENCE EDUCATION**

Lynne Hehr, director  
 OZAR 106  
 479-575-3875

**CENTER FOR PROTEIN STRUCTURE AND FUNCTION**

<http://protein.uark.edu/>  
 Frank Millett and Roger Koeppe, co-directors  
 CHEM 119  
 479-575-4601

**CENTER FOR RETAILING EXCELLENCE**

<http://cre.uark.edu/>  
 Claudia B. Mobley, director  
 WJWH 538  
 479-575-2643

**CENTER FOR SEMICONDUCTOR PHYSICS  
IN NANOSTRUCTURES**

Greg Salamo, co-director  
 PHYS 226  
 479-575-5931

**CENTER FOR SENSING TECHNOLOGY AND RESEARCH**

<http://www.uark.edu/depts/anylchem/cstar/sens.html>  
 Charles Wilkins, director  
 CHEM 119  
 479-575-5198  
 cstar@uark.edu

**CENTER FOR SOCIAL RESEARCH**

<http://sociology.uark.edu/1705.htm>  
 William Schwab, director  
 Main 211  
 479-575-3206  
 bschwab@uark.edu

**CENTER FOR THE UTILIZATION OF REHABILITATION  
RESOURCES FOR EDUCATION, NETWORKING,  
TRAINING AND SERVICE**

<http://www.rcep6.org/>  
 Jeanne Miller, director  
 105 Reserve St., Building 35  
 Hot Springs, AR 71902  
 501-623-7700

**Rehabilitation Research and Training Center for People  
who are Deaf or Hard of Hearing**

<http://www.uark.edu/deafrtc>  
 Douglas Watson, project director  
 26 Corporate Hill Drive  
 Little Rock, AR 72205  
 501-686-9691 (v/tty)

**CENTER OF EXCELLENCE FOR POULTRY SCIENCE**

<http://www.poultryscience.uark.edu/poultry.html>  
 Walter Bottje, director  
 POSC 114  
 479-575-4952

**COMMUNITY AND FAMILY INSTITUTE**

<http://sociology.uark.edu/1876.htm>  
 Kevin Fitzpatrick, director  
 MAIN 211  
 479-575-3777  
 kfitzpa@uark.edu

**DAVID AND BARBARA PRYOR CENTER FOR ARKANSAS  
ORAL AND VISUAL HISTORY**

<http://libinfo.uark.edu/specialcollections/pryorcenter/>  
 Kris Katrosh, director  
 MULN 403  
 479-575-6829

**DIANE D. BLAIR CENTER OF SOUTHERN  
POLITICS AND SOCIETY**

<http://www.uark.edu/ua/tshield>  
 Todd Shields, director  
 MAIN 428  
 479-575-3356

**FULBRIGHT INSTITUTE OF INTERNATIONAL RELATIONS**

<http://www.uark.edu/~fiir/>  
 Donald R. Kelley, director  
 FIIR  
 479-575-2006



**GARRISON FINANCIAL INSTITUTE**

<http://gfi.uark.edu>  
Wayne Lee, director  
RCED 205  
479-575-4399

**GARVAN WOODLAND GARDENS**

<http://www.garvangardens.org/>  
Bob Byers, Garden Director  
550 Arkridge Road, PO Box 22240  
Hot Springs National Park, AR 71913  
1-800-366-4664  
gardeninfo@garvangardens.org

**HEALTH EDUCATION PROJECTS OFFICE**

<http://coehp.uark.edu/5592.htm>  
Michael Young, director  
HPER 326A  
479-575-5639

**HIGH DENSITY ELECTRONICS CENTER (HiDEC)**

<http://www.hidec.uark.edu/>  
Vijay Varadan, director  
HiDEC/ENRC 700  
479-575-4627

**HUMAN PERFORMANCE LABORATORY**

<http://hpl.uark.edu>  
Ro DiBrezza, director  
HPER 321  
479-575-6762

**INFORMATION TECHNOLOGY RESEARCH CENTER**

<http://itrc.uark.edu/>  
Eric Bradford, director  
JPHT 409  
479-575-4261

**INSTITUTE OF FOOD SCIENCE AND ENGINEERING**

<http://www.uark.edu/depts/ifse/>  
Justin R. Morris, director  
FDSC Farm  
479-575-4040

**INTERNATIONAL CENTER FOR THE STUDY OF EARLY ASIAN  
AND MIDDLE EASTERN MUSICS**

<http://www.uark.edu/ua/eam>  
Rembrandt Wolpert, director  
MUSC 201  
479-575-4701  
eam@cavern.uark.edu

**KING FAHD CENTER FOR MIDDLE EAST  
AND ISLAMIC STUDIES**

<http://www.uark.edu/depts/mesp/>  
Thomas Paradise, interim director  
MAIN 202  
479-575-4157

**MACK-BLACKWELL NATIONAL RURAL TRANSPORTATION  
STUDY CENTER**

[http://www.uark.edu/depts/intagpro/ru\\_trans.html](http://www.uark.edu/depts/intagpro/ru_trans.html), or  
<http://www.mackblackwell.org/>  
Melissa Tooley, director  
BELL 4190

**NATIONAL AGRICULTURAL LAW CENTER**

<http://www.NationalAgLawCenter.org/>  
Doug O'Brien and Harrison Pitman, co-directors  
WATR 107  
479-575-7646  
nataglaw@uark.edu

**NATIONAL OFFICE OF RESEARCH ON MEASUREMENT  
AND EVALUATION SYSTEMS**

<http://normes.uark.edu>  
Sean Mulvenon, director  
WAAX 302  
479-575-5593  
orme@cavern.uark.edu

**OFFICE FOR EDUCATION POLICY**

<http://www.uark.edu/ua/oep/>  
Gary Ritter, director  
GRAD 201  
479-575-3773  
oep@uark.edu

**OFFICE FOR STUDIES ON AGING**

<http://www.uark.edu/aging/>  
Ro DiBrezza and Barbara Shadden, co-directors  
HPER 321X  
479-575-5262  
aging@cavern.uark.edu

**RESEARCH ADVOCACY NETWORK**

<http://cied.uark.edu/1547.htm>  
Les Carnine, director  
GRAD 245  
479-575-8465

**SMALL BUSINESS DEVELOPMENT CENTER**

<http://sbdc.waltoncollege.uark.edu/>  
Larry Brian, director  
RCED 210  
479-575-5148

**SPEECH AND HEARING CLINIC**

<http://cdis.uark.edu/spcl.htm>  
Barbara Shadden, director  
SPCL 201  
479-575-4509

**SUPPLY CHAIN MANAGEMENT RESEARCH CENTER**

<http://scmr.uark.edu/>  
Jim Crowell, director  
WJWH 538  
479-575-6107

**SURVEY RESEARCH CENTER**

<http://www.uark.edu/admin/src/>  
Molly Longstreth, director  
HOTZ 123  
479-575-4222

**TERRORISM RESEARCH CENTER**

<http://trc.uark.edu/>  
Brent L. Smith, director  
MAIN 228  
479-575-3401  
bls@uark.edu

**UNIVERSITY OF ARKANSAS COMMUNITY DESIGN CENTER**

<http://uacdc/uark.edu>  
Stephen Luoni, director  
104 N. East Ave.  
Fayetteville, AR 72701  
uacdc@uark.edu

**UNIVERSITY OF ARKANSAS ECONOMIC  
DEVELOPMENT INSTITUTE**

<http://uaedi.cast.uark.edu/>  
Otto J. Loewer, director  
226 Engineering Hall  
479-575-5118

# Student Affairs

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## VISION STATEMENT

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The Division of Student Affairs will maximize the University of Arkansas Experience by challenging, supporting, and encouraging each student to become intellectually engaged, more self-aware, and strongly bonded to the University.

### Mission Statement

The Division of Student Affairs mission is to help students achieve their goals through the provision of high quality support services and comprehensive programs that stimulate, enhance, and extend student learning; empowering University of Arkansas graduates to be-come active, engaged citizen leaders in Arkansas and throughout the world.

### Core Values

Members of the Division of Student Affairs believe that learning, both inside and outside the classroom, is central to the University of Arkansas experience and the Division of Student Affairs is a significant partner in the development of a campus learning community. The members recognize that this campus learning community is impacted by the individual's unique learning style and life experience. They believe the values listed below strengthen and enrich this learning environment. The division's members:

- Are student centered
- Are an inclusive community
- Treat all individuals with dignity and respect
- Encourage and model civility in all relationships
- Provide friendly, helpful, and responsive service
- Embrace their role as scholars and educators
- Present the highest ethical standards based on trust, honesty, and integrity
- Are committed to the pursuit of professional excellence
- Strive for the acquisition and use of knowledge
- Act as partners and collaborators in all endeavors

### Strategic Goals

- Foster the development of an inclusive community
- Enhance student learning
- Promote professional and personal development
- Increase and responsibly manage resources
- Promote innovative programs and services
- Advocate rights and responsibilities
- Encourage the application and use of new and emerging technologies

The Vice Chancellor for Student Affairs administers the departments of the Division of Student Affairs and provides leadership in the development of programs and services that supplement the classroom experience of students and enrich the quality of campus life. The Vice Chancellor serves as a liaison to other administrative offices, faculty, and student governing groups. The office is a central source of information concerning University policies and procedures affecting student life and co-curricular programs and services.

Students are encouraged to bring their concerns, questions, and ideas to the attention of the Vice Chancellor or the Associate Vice Chancellor/Dean of Students.

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

## STUDENT SERVICES

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### Enhanced Learning Center

The Enhanced Learning Center is designed to provide assistance to all University of Arkansas students in meeting their academic goals here and beyond. The center's goal is for every University of Arkansas student who needs or wants academic assistance to participate in the programs and services of the center without hesitation or barrier. More than 4,000 students took advantage of the center's programs last year including:

- Tutoring in a variety of subjects (math, the sciences, English, foreign languages, composition and other courses taught throughout the University);
- Supplemental instruction in math and the sciences;
- Study skills workshops;
- Math and writing resources;
- Study rooms; and
- State-of-the art computers with laptop checkout availability.

Center partners include the Math and Tutoring Resource Center (Sci-

ence Engineering Building); Mullins Library; and University Housing. These partnerships allow the Enhanced Learning Center to deliver academic-success services to students in a variety of locations and formats.

The Enhanced Learning Center is on the Garden Level of Gregson Hall and houses Student Support Services and the Fulbright Office of Remediation and Retention. The center is open from 8 a.m. to 9 p.m. Monday through Thursday; 8 a.m. to 5 p.m. on Friday; and from 5 to 9 p.m. on Sunday.

As a part of the Enhanced Learning Center, the Quality Writing Center is located in 315 Kimple Hall and provides writing assistance for both undergraduate and graduate students. The Quality Writing Center in Kimple Hall is open from 9 a.m. to 5 p.m. Monday through Thursday, and from 9 a.m. to 4 p.m. on Friday. Visit the Quality Writing Center Web site for hours at other locations.

Enhanced Learning Center satellites are located in Futrall Hall, Maple Hill and Reid Hall. Search for specific times, locations and tutors on the ELC Web site at <http://elc.uark.edu>. Other satellite locations are in Mechanical Engineering, Mullins Library and the Freshman Engineering Center. Check the Enhanced Learning Center's Web site for tutor and subject availability.

Contact the Enhanced Learning Center by phone at 479-575-2885 or visit the center's Web site at <http://elc.uark.edu/>.

### Off Campus Connections

Off Campus Connections provides resources and referrals for current and prospective undergraduate students, including:

- First-semester students living at home
- Upperclassmen living off campus
- Adult, returning, and transfer students

Off-campus students are defined as those not living in a residence hall, fraternity, or sorority house. Approximately 10,000 University of Arkansas undergraduate students live off campus, including traditional-aged students who live with family members, as well as nontraditional students who are age 25 or more, are married, or have dependents. Off-campus students may attend classes full-time or part-time, and they may work full-time or part-time. Students may live close to the campus or they may live hours away. Some students take all or the majority of their classes online.

Off Campus Connections provides information, referrals, encouragement, support, and recognition to students who are living off campus. Experienced student leaders known as Peer Assistance Leaders and Peer Mentors are also available to assist.

To encourage commuter student involvement, a Commuter Lounge is located on the sixth floor of the Arkansas Union. The Commuter Student Association invites all interested off-campus students to become members of this registered student organization and help it make the University of Arkansas more "commuter friendly." In addition, students are kept informed about campus life through a monthly electronic newsletter and weekly e-mail announcements. The ultimate goal is for each student to feel a part of the campus and attain a degree from the University of Arkansas.

One helpful service is a free online database and message board where upper-class students and adult and transfer students can search for off-campus housing, post items for sale, or find potential student roommates: <http://offcampushousing.uark.edu>.

For further information, visit the Off Campus Connections Web site at <http://www.uark.edu/occ> or send an e-mail to [occ@uark.edu](mailto:occ@uark.edu). Students may also visit the office in Arkansas Union Room 632 or contact OCC by telephone at 479-575-7351. In order to provide better customer service, appointments in advance are appreciated.

### Student Support Services

The primary purpose of the Student Support Services program is to prepare disadvantaged persons for successful entry into, retention in, and completion

of postsecondary education. In general, the program identifies low-income and first-generation college students and provides them with encouragement, support and assistance.

Student Support Services is designed to improve academic performance, increase student motivation, and facilitate transition from under-graduate to graduate education. Services provided include tutorial services; instruction in basic study skills; academic, financial, and personal counseling; assistance in obtaining financial aid; and assistance in admission and enrollment in graduate programs.

Student Support Services is located within the Enhanced Learning Center on the ground floor of Gregson Hall. Call 479-575-3546. For more de-tails, visit the Student Support Services Web page at <http://www.uark.edu/sss/>.

### Services for International Students

The Office of International Students and Scholars serves foreign students and scholars and enhances the global awareness of the UA community. The office provides pre-arrival assistance and a comprehensive orientation program for newly admitted international students each semester. Cross Cultural Mentors provide one-on-one contact and group activities for new international students during their first semester, assisting them in their adjustment to the academic community and the Fayetteville/Northwest Arkansas area. The office provides services such as immigration advising, employment authorization, non-resident tax filing assistance, and other programs and services that help students and scholars reach their academic and personal goals and make their time at the University of Arkansas more productive and enjoyable.

The office administers four outreach programs that give students an opportunity to learn about U.S. life and culture while enriching the community's knowledge and appreciation of diverse populations and cultures. These are: the Friendship Family Program, which pairs students with local families who share American culture, daily life, and special activities with students; the Conversation Club program, which provides students with a small-group setting in which to practice conversational English with native speakers; the International Culture Team, a group whose members speak or share other skills and talents through presentations at community organizations, representing their home countries and cultures; and the Spouses Program, which brings together spouses of students and scholars to build friendships and introduce resources in the community that would benefit them.

The office sponsors various events including: the celebration of International Education Week each fall, and annual seminars for immigration attorneys. A number of registered student organizations specific to various country, culture, or language groups are linked with the office including the International Students' Organization (ISO), a group for U.S. and international students, which organizes events such as the International Bazaar and an annual banquet.

The Office of International Students and Scholars is in Holcombe Hall, Room 104; phone 479-575-5003; fax 479-575-7084; e-mail [iss@uark.edu](mailto:iss@uark.edu); Web: <http://iss.uark.edu>.

### University Ombuds Office

The University Ombuds Office provides an informal, impartial, and confidential means of conflict resolution to students and the campus community. It is the goal of the office to foster a culture of civility, safe and open dialogue, and to encourage cooperative problem resolution. When a student contacts the office to address a specific conflict, an ombud will: listen to the student's concerns, provide facilitation or mediation services when appropriate, value diversity, hear all perspectives, assist the student in considering options for resolution, and remain impartial to all parties involved. Services are confidential, and no identifying records are kept.

Educating the University community and maintaining effective processes are important components of preventing conflicts from escalating and can

help enable University students and employees to effectively address adversity themselves. Training is available in alternative conflict resolution techniques, theory, and practice. Workshops are customized to fit specific needs. Recommendations may be made to administrators to improve processes that may inadvertently create conflicts, or inhibit informal resolution. Our goal is to create an environment that supports the early resolution of conflict.

The University Ombuds Office is in the Arkansas Union, Room 628; phone 479-575-4831; Web: <http://www.uark.edu/ua/ombuds/>.

### **Greek Life**

The Office of Greek Life facilitates the educational process and provides resources related to programs that promote the growth and development of students affiliated with fraternities and sororities on campus. The overall mission is to enhance the academic, cultural, moral, and social development of students in Greek organizations; provide training in leadership and other personal and social skills; promote student involvement in extracurricular activities and community service projects; and promote Greek Life as a productive and viable lifestyle on campus. Programs such as Recruitment, Greek Getaway, Greek Life Facilitators, and Greek Summit are coordinated by the Office of Greek Life, the Interfraternity Council, the National Pan-Hellenic Council, and the Panhellenic Council.

The Interfraternity Council (IFC), National Pan-Hellenic Council (NPHC), and the Panhellenic Council (PHC) are the governing bodies for 11 national sororities and 16 fraternities. The officers and representatives of these three councils work with the Office of Greek Life to provide positive programs and leadership opportunities to the members of the Greek organizations. The Greek Life office is in the Arkansas Union A697; phone 479-575-5001 or fax 479-575-3531; Web: <http://uagreeks.uark.edu/>.

### **Multicultural Center**

The Multicultural Center is here to welcome students to the Razorback family at the University of Arkansas. The Multicultural Center is a department that enhances the student academic experience by preparing them for life in a rich and diverse society. The Multicultural Center is committed to providing an optimal learning environment that promotes cross-cultural interaction among all students by collaborating with university and community constituents to create educational, cultural, and social programs.

The Multicultural Center can be used for educational programming, art displays, and cultural exhibits. Students are encouraged to take advantage of the student organizations within the Multicultural Center and the educational and entertainment resources that include books, video and board games, and study areas. The Multicultural Center is located on the fourth floor of the Arkansas Union in Room 404. Contact information: 479-575-2064; Web: <http://multicultural.uark.edu/>.

### **Reasonable Accommodations for Students with Disabilities**

The Center for Educational Access (CEA), 104 Arkansas Union, is the central campus resource for students who require reasonable accommodations in order to access the programs, services and activities offered through the University. CEA staff work in partnership with the individual student to communicate and facilitate any accommodation needs to faculty and staff. Accommodation determination is based on an analysis of medical or psychological documentation provided to the CEA by the student. Students must meet with one of the CEA staff to discuss their needs and provide such documentation before any accommodations can be granted.

To register for services or for more information, contact the Center for Educational Access, University of Arkansas, 104 ARKU, Fayetteville, AR 72701, phone 479-575-3104 (voice) or 479-575-3646 (TTY); e-mail: [ada@uark.edu](mailto:ada@uark.edu); Web: <http://www.uark.edu/us/csd/>.

### **Office of Community Standards and Student Ethics**

The mission of the Office for Community Standards and Student Ethics (OCSSE) is to provide an equitable and effective educational system that promotes responsibility, individual growth, accountability, and student learning through community outreach, peer mentoring, and enforcement of the Code of Student Life. The office is designed to provide an equitable process for addressing alleged infractions of University rules, regulations, and/or laws by students. This system is informal, non-adversarial, and intended to be a part of the total educational process. Students are encouraged to make responsible decisions and to be accountable for their actions. In addition, students who witness violations of the Code or who are victims of inappropriate or illegal behavior perpetrated by other students are encouraged to report such activity to the Office of Community Standards and Student Ethics.

Students who are interested in involvement with the All-University Conduct Board or the PEERs (Peers Educating Ethical Razorbacks) program should contact the director of the OCSSE at [judicial@uark.edu](mailto:judicial@uark.edu). The All-University Conduct Board comprises faculty, staff and students and is responsible for adjudicating cases of alleged student misconduct as outlined in the Code of Student life. This is an advanced leadership opportunity for students who would like to gain valuable experience working with faculty and staff on an impartial peer review board. PEERs is an advanced student leadership opportunity designed to promote leadership and ethics among University of Arkansas students. PEERs members give highly interactive and engaging presentations that challenge students to think and act with integrity.

For more information regarding the Code of Student Life, please see the Student Handbook at the Student Handbook Web site at <http://www.uark.edu/ua/uaprod/handbook/>. The Office of Community Standards and Student Ethics is in the Administration Building, Room 325, phone 479-575-5170; Web: <http://www.uark.edu/ethics/>.

### **First Year Experience Programs**

First Year Experience Programs at the University of Arkansas is a collaborative effort developed to enhance the academic and social integration of first-year students through a variety of classroom and co-curricular activities. Faculty and Student Affairs professionals work together to offer special assistance and promote skills designed to help students experience a fulfilling, rewarding, and successful first year at the University, and to assist them in reaching their ultimate goal of completing a degree.

First Year Experience Programs supports and collaborates on 11 major initiatives: New Student Orientation, R.O.C.K. Camp, Hog W.I.L.D. Welcome Weeks, Academic Convocation/Burger Bash, Help-A-Hog, Midnight Madness Shopping Spree, Fall Family Weekend and Spring Family Reunion, Parent Programs, Parent Partnership Association, and First Year Experience Residence Halls and First Year Experience seminar courses. First Year Experience seminar courses are guided by an advisory board of Student Affairs professionals and First Year Experience course coordinators from each academic college. University of Arkansas executive administrators, faculty and staff members participate in these programs as speakers, mentors or through other means of engagement. By providing transitional support for incoming students, First Year Experience Programs effectively promote the students' academic growth and support the mission of the University.

First Year Experience Programs is located in the Arkansas Union, Room A688; phone 479-575-5002; Web: <http://fye.uark.edu/>.

### **PRE-COLLEGE PROGRAMS**

The Office of Pre-College Programs comprises nine college preparation initiatives that collectively identify, challenge and enrich prospective college

students to prepare them for the rigors of higher education. These initiatives include seven federally funded TRIO programs (Educational Talent Search, College Project Talent Search, University Access Talent Search, Upward Bound, REAL Upward Bound, Upward Bound Academy for Math and Science, and Veterans Upward Bound.) as well as Gifted and Talented Scholars, and College Residential Institute. The office focuses on providing equal opportunity for potential first-generation college students who aspire to continue their education at the collegiate level. Eligibility requirements include, but are not limited to, having first-generation status and exhibiting academic potential. All participants receive multifaceted services to assist them with developing the skills, information, and resources necessary for college success.

As an ongoing mission, Pre-College Programs actively solicits collaborative partnerships with businesses, communities at large, and various departments within Student and Academic Affairs. These efforts enrich the services and learning opportunities available to participants and provide possibilities for the expansion of programming. For additional information, visit the office at 200 Hotz Hall, call 479-575-3553, or contact the program online at <http://precollege.uark.edu/>.

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

College Project, University Access and Educational Talent Search are early intervention projects. Serving 2,400 students in grades 6-12, the programs promote the skills and motivation necessary for successfully completing a baccalaureate degree. Emphasizing personal and career development, technological and academic skills, ACT readiness, and college preparatory workshops, the programs prepare students to meet their college entry goals. Academic monitoring and guidance counseling are incorporated to facilitate the progress of each student. Summer enrichment and campus-based events provide ongoing opportunities for institutional and faculty involvement.

### **Upward Bound and REAL Upward Bound**

Upward Bound is designed to offer challenging pre-college experiences to students who have the desire and ability to attend and complete a postsecondary education. Services are designed to develop the essential skills, study habits, and discipline necessary for success in high school and college. Upward Bound serves 71 students in grades 9-12, from participating schools in Benton and Washington counties. Participants commit to the program until high school graduation and participate in both a six-week summer residential program and an academic year component. Being curriculum-based, the program provides exposure to a wide variety of academic, cultural, and social opportunities, simulating a college experience. Upward Bound students completing their senior year of high school receive free tuition for up to six hours of college credit. A second Upward Bound program, R.E.A.L. (Reaching Educational Aspirations of Learners) serves 50 students in the Rogers and Springdale Public School districts.

### **Upward Bound Academy for Math and Science**

The Upward Bound Academy for Math and Science serves students in grades 9-12 from Washington, Madison, and Crawford counties in Arkansas. This college preparatory program for students who excel in the academic areas of math and science encourages post-secondary study in related career fields. The program includes a six-week residential component in the summer and an academic component year round. An integrated curriculum focusing on group and individual research projects in math, science, and engineering is supplemented with offerings in English, foreign language, literature, and computers. Monthly meetings composed of workshops and hands-on projects provide enhanced and ongoing student involvement throughout the year with the campus-based project. College tuition and credit is available to students bridging from their senior year in high school to college.

### **Veterans Upward Bound**

This program identifies and serves the unique needs of 120 eligible veterans from Northwest and Central Arkansas who have the academic potential and desire to enter and succeed in a post-secondary program of study. Eligible veterans have completed a minimum of 180 days of active duty in the military or Coast Guard and hold any discharge other than dishonorable. Services include tutoring; guidance counseling; assistance in filing financial aid and VA benefit forms; academic/career assistance; test preparation for entrance exams; and courses in English, Spanish, math, science, and computer technology. Courses are offered each semester.

### **Gifted & Talented Scholars**

The University of Arkansas Gifted & Talented Scholars program identifies 6th-12th grade students who possess exceptional academic ability and motivation. Through academic events and programming, frequent newsletters and other informative correspondence, the program serves as a resource for students and parents in preparing for college and offers them an opportunity to establish a relationship with the University of Arkansas Honors College early in their academic careers. The Gifted & Talented Scholars Summer Academy, an intensive three-week residential experience for students completing the 8th or 9th grades, is an educationally advanced and dynamic learning environment designed to develop the intellect and imaginations of gifted students. Explorations iCAMP is a one-week program with a diverse and engaging curriculum for students completing the 6th or 7th grades. (Gifted & Talented Scholars is open to students in Arkansas and surrounding states.)

### **College Residential Institute**

The College Residential Institute is a month-long program specifically designed for rising 9th grade students from the Kauffman Scholars program in Kansas City and the KIPP Delta College Preparatory School in Helena, Arkansas. The program is a mixture of fun activities, academic engagement, and authentic campus life at the University of Arkansas. Students engage in self-selected coursework with faculty facilitating the exploration of various college majors and career fields. All sessions emphasize the use of technology and are project-driven learning incorporating math, science and language arts.

## **UNIVERSITY CAREER DEVELOPMENT CENTER**

The UA Career Development Center provides a comprehensive career development program designed to meet the needs of the University of Arkansas community. The center assists students and alumni in the development of skills necessary for lifelong career management.

The center provides individual and group career advising sessions; a one-hour credit Career Decision-Making course; career planning and job search workshops; individual assistance with resume preparation and job interview skills; resources for experiential education opportunities; career interest assessments; a career resource library; and placement services.

UA Career Development Center staff members invite all UA students to become members of the Professional Development Institute, a nationally recognized career development resource. Designed for University of Arkansas students, the institute provides students a comprehensive plan enabling them to attain a level of career maturity necessary for job success.

Students are encouraged to begin working with the staff of the Career Development Center during their first year on campus. Advisers assist students in selecting a college major, obtaining a cooperative education or internship placement, and preparing for their job search or graduate/professional school application. A full-range of career fairs is offered each semester including all-campus fairs and individual industry-specific fairs.

Career Development Center staff members welcome opportunities to present career planning or job search information to students in the classroom and residence hall. There are valuable opportunities to develop strong professional relationships with the 300 to 400 corporate recruiters who visit the UA campus each year.

The University Career Development Center provides services and educational programs to students, alumni, former students, faculty, staff, and their families.

For further information, contact the University Career Development Center, ARKU 607, 479-575-2805, or visit our Web site at <http://career.uark.edu/>.

## UNIVERSITY HEALTH CENTER

### Pat Walker Health Center

The Pat Walker Health Center provides professional and comprehensive medical care, mental health care, health education, and health promotion for the University of Arkansas community, including students, faculty, and staff. Committed to physical, mental, spiritual, emotional, and social health, the highest standards of quality, and an appreciation of the value of each individual, the Pat Walker Health Center services and programs support the education and development of each individual.

Pat Walker Health Center services include:

#### Medical Services

Professional medical staff including physicians, nurse practitioners and registered nurses provide primary health care, as well as women's health care. An allergy clinic and a travel immunization clinic are also available. The Pat Walker Health Center is particularly advantageous to the campus community with a comprehensive clinical laboratory, X-ray facilities, and a licensed pharmacy with both prescriptive and over-the-counter medications.

#### Counseling and Psychological Services

Counseling and Psychological Services (CAPS) provides a wide range of consultations to students, students' partners, staff, and faculty of the University of Arkansas. Psychologists, social workers, and professional counselors work with students to solve problems, understand themselves, grow personally, and develop more satisfying relationships with friends and family. In addition to office consultations and therapy sessions, students have opportunities to participate in educational programs on campus as well as access to 24-hour emergency services for mental health crises.

#### Health Promotion and Education

A unique feature of the Pat Walker Health Center is the complete focus on the promotion of good health and prevention of negative health conditions. Professional health educators serve the campus community with wellness and prevention activities delivered in a variety of educational settings including everything from individual consultations to one-hour credit classes. Students benefit from the breadth of health and lifestyle topics addressed, which help them attain success in all aspects of their lives.

The Pat Walker Health Center opened at 525 North Garland Avenue in November 2004, with expanded services for the University of Arkansas community.

Students pay a per credit hour semester health fee that covers professional office visit charges. Student spouses are eligible for services and may pay the health fee. Services other than professional office visits are the responsibility of the patient and/or their health insurance plan. The University strongly recommends that all students have health insurance. A student health insurance pol-

icy endorsed by the Associated Student Government is available to all students, student spouses, and their dependent children. Students may enroll in this plan at the Pat Walker Health Center.

The Pat Walker Health Center welcomes inquiries about specific services at 479-575-4451; TTY 479-575-4124. More information is available on the Web at <http://health.uark.edu/>.

## UNIVERSITY HOUSING

University Housing is committed to providing a quality living and learning environment that both challenges and supports the personal, social, and academic development of our residents and their diverse communities.

National research has shown that academic success in the first year and beyond is directly linked to residing in an on-campus residence environment. The University of Arkansas recognizes the benefits that students receive from living on campus their first year. Therefore, all single students who are admitted to the University with a freshmen classification and under 21 years of age are required to live on campus in a residence hall, or in their parent or legal guardian's permanent home. Students who are admitted to the University of Arkansas as transfer students from another post-secondary institution, and who have completed at least 24 credit hours at that institution are not required to live on campus.

Requests for a newly admitted freshmen to live somewhere other than with parents or a legal guardian in their permanent home are not likely to be approved under most circumstances. Students planning to live with their parents or legal guardian, in their permanent home should complete the Living with Parent Verification Form prior to attending an orientation session. Students requesting an exemption from the University of Arkansas Freshmen Residency Requirement should send all required paperwork to University Housing at least three weeks prior to attending an orientation session to ensure the student receives approval or denial prior to attending orientation. Failure to do so could cause long delays in the orientation process. Students needing a Living with Parent Verification Form or who wish to apply for an exemption to the University's requirement for single freshmen to live on campus may refer to the information on the Housing Web site: <http://housing.uark.edu/forms2/>.

Residence Halls are managed by a full-time staff person, Coordinator for Residence Education, who has completed a master degree program in higher education, counseling or a related degree. This individual is selected for his or her academic credentials and interest in helping others, as well as his or her ability to work well with college students. In addition, every area or floor is staffed by a Resident Assistant who is an upperclassman with training, experience, and knowledge to answer students' questions and, more importantly, to help students find their own answers. Counselors in Residence (graduate assistants) provide short-term counseling for students living in the residence halls in response to personal, social, academic, and developmental needs.

University Housing offers innovative Living/Learning Communities for University of Arkansas students. These Living/Learning Communities comprise major- or discipline-specific Academic Learning Teams and more general and exploratory Thematic Learning Communities. These opportunities have been designed to help students in their transition to college, to fit their interests and needs, and to help them achieve success academically and socially. Most importantly, students get to live with peers who have the same interests, majors, or career plans. Members of Living/Learning Communities have the chance to get to know faculty on a personal level and develop strong friendships with fellow students. Living/Learning Communities cost nothing extra, and residents have the opportunity to participate in fun experiences that connect learning in and out of the classroom.

Living options include traditional halls, suites and apartments with designations of single-gender or co-ed. Rooms are available for visually or hearing-impaired students as well as those who are physically challenged. Residence hall entry/exit doors are secured 24 hours a day. Some entries are unlocked to accommodate offices housed in our facilities and classes that are held in our classrooms. These entry/exit doors are not secured 24 hours each day. Most, but not all, of these areas have interior doors that secure the living floors. Residents are provided access via an electronic access system. Students should be careful not to allow non-residents to follow them into their residence hall. Residents are provided access via a fob issued when they check-in. Students are responsible for escorting all visitors and guests at all times.

Each of the three separate dining facilities on campus is managed by Campus Dining Services and provides a natural setting for socializing with friends and enjoying a wide variety of high quality, nutritious meals. All students living in a residence hall, except those residing in summer school housing, are required to have a meal plan. There are several meal plans available to meet the needs of both on-campus and off-campus students. Learn more about Campus Dining Services online at <http://dineoncampus.com/razorbacks>.

## ARKANSAS UNION

The Arkansas Union seeks to support unique and diverse programs, provide professional services, and satisfy the ever-changing needs of students, faculty, staff, alumni, and guests.

### Tenets

Staff and students involved with the Arkansas Union pursue the following positions with regard to the following areas:

- **Facilities** – Offer a welcoming and inviting facility that provides a functional and exciting “Woo Pig Sooie” atmosphere for all Union constituents
- **Services** – Promote student admission and retention by offering services, conveniences and amenities, while also serving the larger University of Arkansas community
- **Program Support** – Support departments and organizations in promoting the growth and development of students through civic, cultural, educational, social, and recreational programs

The Arkansas Union serves as the community center of the University for all members of the college family. As the “living room” of campus, the Union is the gathering place of the college. The Union provides services and conveniences that members of the campus community need in their daily lives and creates an environment for getting to know and understand others through formal and informal associations. Included in the Union are:

### Retail Outlets

ATM's (various banks)	Razorback Shop
Catering and Dining Services	RZ's Coffeehouse®
Club Red Convenience Store	U.S. Post Office
Computer Store	Union Hair Care
First Security Bank	University Bookstore
PMC - Union Copy Center	

### Union Market

Bamboo Asian Cuisine	Mexican specialties
Burger King®	Chick-Fil-A®
Sub Generation sandwiches	Mama Leone's Pizza & Pasta
Hot rotisserie food	
Salads, soups, barbecue, baked items	

### Facilities

24-hour computer lab	Meeting rooms
Anne Kittrell Art Gallery	Reception rooms
Alltel Ballroom	Union Information Center
Banquet rooms	Union Theatre
Lounges	Union Programs Theater

The Arkansas Union is the center of student activity and is a perfect place for students to get involved on campus. The Union is a student-centered organization that values participatory decision-making. Through volunteerism, committees, and student employment, the Union offers first-hand experience in citizenship and educates students in leadership, social responsibility, and values. As the center of the college community life, the Union complements the academic experience through an extensive variety of cultural, educational, social, and recreational programs. These programs provide the opportunity to balance course work and free time as cooperative factors in education. The Union provides program support for the departments hosting these events. Located within the Union are 14 offices dedicated to providing programs and services to students.

### Student Services

- Arkansas Union Administration/Reservation Services
- Assistant Vice Chancellor of Student Affairs
- Associate Dean of Students – Campus Life
- Associated Student Government
- Campus Card Office
- Career Development Center
- Center for Educational Access
- First Year Experience
- Greek Life
- Multicultural Center
- Off Campus Connections
- Student Activities
- Center for Leadership and Community Engagement
- University Ombuds Office
- Student Technology Center
- University Productions

## CENTER FOR LEADERSHIP AND COMMUNITY ENGAGEMENT

<http://leadership.uark.edu>

The Center for Leadership and Community Engagement, located in the Arkansas Union A665, is the central location for student organizations and activities for the University. The primary mission of the Center for Leadership and Community Engagement is to engage all students in purposefully designed leadership education and experiential learning opportunities that result in becoming self-aware, discovering value in self and others, developing critical thinking and communication skills, becoming a lifelong learner, and developing responsible citizenship.

The Center for Leadership and Community Engagement is responsible for the oversight and administration of the following areas:

### Student Organizations

All student organizations must register annually with the Center for Leadership and Community Engagement. Registration information is kept on file to assist students and administrators in learning more about particular organizations. The Center for Leadership and Community Engagement pro-



vides student organizations with assistance and services to help them succeed, including the annual Student Involvement Fair known as Razorbash, information on facility reservations and fund-raising, trademark forms, mailboxes, and locker space. The center also assists student organizations in event planning, provides educational workshops for students and advisors, and conducts retreats for student organizations. A limited number of offices are also awarded annually in the Arkansas Union to organizations through the Arkansas Union Advisory Committee.

Types of Registered Student Organizations (RSO):

**Governing** – An organization whose primary purpose is to serve as a governing body for a large or specific constituency of students.

**Greek** – An organization with Greek letters who is a member of the National Inter-Fraternity Council, the Pan-Hellenic Council, or the National Pan-Hellenic Council.

**Honorary/Service** – An organization that requires a minimum grade point average as a prerequisite to membership and/or is affiliated with a national service or honorary organization.

**International/Cultural** – An organization whose primary purpose is to provide a forum in which participants create awareness for a specific culture through educational, social, and recreational activities.

**Professional** – An organization whose primary purpose is to provide a forum for participants to discuss and develop professional careers and/or is affiliated with a national or regional association.

**Religious** – An organization whose primary purpose is to provide information and activities associated with one or more religions.

**Special Interest** – An organization whose primary purpose is to provide an organized format for the practice and/or pursuit of a special or common interest.

### Leadership Programs

Leadership programs are designed to help students gain and refine leadership skills and to allow them to network with other campus leaders. Selected programs include: Emerging Leaders, the LeaderShape Catalyst Program, the LeaderShape Institute, the Arkansas Student Leadership Academy, the Leadership Workshop Series, the LEAD Team and the Leadership Resource Library. These interactive programs motivate students and develop key leadership skills related to self-awareness, management, organizational leadership, interpersonal communication skills, and mentoring others. Students play an integral role in planning and implementing these programs in order to refine their leadership skills.

### Community Engagement and Service Learning Programs

The Volunteer Action Center is a student-led programming board designed to connect students and student organizations. The Volunteer Action Center administers several programs including the Susan G. Komen Race for the Cure, Make a Difference Day, the Angel Tree Book Drive, and Alternative Spring Break. The Volunteer Action Center also oversees an e-mail List-serv that connects students to service opportunities within the Northwest Arkansas community.

### Associated Student Government

The Associated Student Government (ASG) provides important services to the University community and is an integral part of a shared campus governance system. Associated Student Government is a student-led organization that enables students to have an active voice in the decisions and policy that directly affect all students at the University of Arkansas. Students involved in Associated Student Government have the opportunity to positively impact the quality of student life, work with and allocate student fees, provide a voice for student concerns as well as oversee programs and policies for all students. Through the executive, legislative and judicial branches of student government,

students have the opportunity to work for and among their peers to make a difference on all levels of the University. Involvement levels and time commitment vary upon duties. Visit the student government Web site at <http://asg.uark.edu> or the Associated Student Government office (ARKU A669) to find out more.

## STUDENT ACTIVITIES

### University Programs

University Programs is a volunteer student organization responsible for planning and coordinating more than 150 events annually for the campus community. University Programs provides students with cultural and educational experiences, entertainment, and fun. Seven committees, all made up of students, select, schedule and produce events such as concerts, movies, lectures, fine arts performances, gallery exhibitions, and daytime programs. Being a part of University Programs gives the student committee members leadership training and real opportunities to gain practical planning experience. Supported by a student activity fee, a majority of University Programs events are free to students.

### Friday Night Live

Friday Night Live, a late-night programming series at the University of Arkansas, is a collaborative effort for programming, education, entertainment and retention. It is designed to increase diversity and community awareness through interactive social events. Friday Night Live programs occur on and off campus eight Friday nights each semester. They are of the highest quality, represent all UA students, engage the University community, and celebrate diversity to be enjoyed by all who participate.

### Student Media

Student Media is an umbrella organization that administers and advises the official student media outlets of the University. These outlets are: the student newspaper, *The Arkansas Traveler*; the University of Arkansas yearbook, *The Razorback*; the student television station, UATV; and the student radio station, KXUA. All provide a forum for student expression, entertainment, news and information of interest to the campus community. Other than a small support staff, these groups are entirely staffed by student employees and volunteers, including editors and station managers. For more information, contact Student Media at 479-575-3406.

# Honors College

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## Honors College Office

418 Administration Building, 479-575-7678

### Dean

Robert McMath

### Associate Dean

Suzanne McCray

### Academic Scholarship Office

101 Old Main, 479-575-4464

### Office of Nationally Competitive Awards

418 Administration Building, 479-575-7678

### Advanced Placement Summer Institute

418 Administration Building, 479-575-7678

### World Wide Web:

<http://honorscollege.uark.edu/>

E-mail: [honors@uark.edu](mailto:honors@uark.edu)

## MISSION AND OBJECTIVES

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The mission of the Honors College at the University of Arkansas is to provide exceptional opportunities for outstanding undergraduates to enhance their educational experiences and academic performances, and to serve the University by underscoring its reputation as a research institution, where students come first. This mission incorporates four areas of responsibility: recruitment; administration of honors fellowships, Honors College research grants, and study-abroad scholarships; coordination of honors programs and curricula; and coordination of related services.

The Honors College administers unparalleled support to more than 2,000 students through merit-based scholarships and fellowships totaling more than \$17 million. The college provides a community for high achieving students and top professors comprising about 15 percent of the undergraduate student body and more than one-third of the faculty. The Honors College is also an umbrella for the University's six college-based Honors Programs, and students are automatically admitted when they enroll in the Honors Program in their major. The Honors College serves as a catalyst for promoting academic success, making educational opportunities available to interested undergraduates regardless of whether or not they are Honors students.

## FACILITIES AND RESOURCES

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The Dean's Office for the Honors College is housed on the fourth floor of the Administration Building. Large honors lounges, designed as study and relaxation areas for students, may also be found on the fourth floor. The Honors College was created by a \$200 million gift from the Walton Family Charitable Support Foundation with the goal that an honors education would be available in every college. The Honors College provides coordination of honors efforts among the colleges and additional scholarship and service opportunities for participating students.

The Academic Scholarship Office awards scholarships to a variety of students, both incoming and current, at the University of Arkansas. Approximately 5,000 awards are made each year, at a value of approximately \$18 million. Students do not have to be in the Honors College to receive many of these scholarships though participation in honors of qualified students is always encouraged.

Scholarships awarded to incoming freshmen include the Chancellor's Scholarship, the Honors College Academy Scholarship, the Silas Hunt Scholarship, the University Scholarship, and the Leadership Scholarship. Scholarships for current students include the Brandon Burlsworth Memorial Scholarship, the R. Coin Mason Scholarship, the Blanche Bledsoe and Clarence J. Rosecrants Senior Endowed Scholarship, the Boles-Zaulx Scholarship, the Alfred Allen Scholarship, and many more. These scholarships are available to students across the University. For additional information see the chapter on Financial Aid and Scholarships in this catalog.

The Office of Nationally Competitive Awards provides assistance to all students who are applying for international graduate fellowships: the Marshall, Rhodes, Gates Cambridge, Rotary, and Fulbright, and national graduate fellowships such as those provided by the National Science Foundation, the Department of Defense, the Department of Energy, and the Mellon and Jacob Javits Foundations. The office also assists students with applications for nationally competitive undergraduate scholarships: Barry Goldwater (for outstanding sophomores and juniors in mathematics, science, and engineering), the Truman (for outstanding juniors interested in pursuing a career in public service), the Morris Udall (for competitive students who intend to pursue a career connected to environmental concerns), the James Madison (for students who want to become educators in the social sciences) and many more. The Office also provides assistance to graduate, law, and medical school applicants.

The Honors College reports to the Chancellor through the Provost and Vice Chancellor for Academic Affairs. The leaders of the Honors College are advised by two groups: The Honors Council, which comprises senior professors and academic administrators and is chaired by the dean, and the Honors College Directors' Council, which comprises the directors of the Honors Programs in each of the colleges and schools and is chaired by the Associate

Dean of the Honors College. Honors Program directors include:

Sidney Burris, Fulbright College of Arts and Sciences, Old Main 517

Carol Gattis, College of Engineering, Bell Engineering 3165

Gary Ferrier, Walton College of Business,

Walton College of Business 418

Kim Sexton, School of Architecture, Vol Walker 120

Nan Smith-Blair, College of Education and Health Professions,  
Ozark Hall 216E

Duane Wolf, Dale Bumpers College of Agricultural, Food  
and Life Sciences, Plant Sciences 115

## **DEGREES OFFERED**

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The Honors College does not confer degrees. Honors degrees are conferred by the college of major.

## **OTHER PROGRAMS**

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### **Advanced Placement Summer Institute**

The Advanced Placement Summer Institute (APSI) is a College Board approved summer program coordinated by the Honors College. The institute provides training to AP teachers in American history, world history, biology, calculus, chemistry, composition, computer science, government, literature, physics, psychology, and statistics.

### **Honors College Internships**

Approximately 40 Honors College internships are offered each year. Students register for a one-hour credit course. The course provides information on applying for scholarships, writing resumes and personal statements, and interviewing skills for internships and fellowships.

## **COLLEGE ADMISSION REQUIREMENTS**

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Admission to the Honors College requires that a student first be admitted to an honors program in the college of major. Students admitted to an honors program are automatically included in the Honors College. Students admitted to the Honors College must have a minimum 28 ACT or SAT equivalent and a minimum 3.5 high school grade-point average. These are the basic requirements for each of the honors programs except the Walton College, which requires a 28 ACT or SAT equivalent and a minimum 3.75 high school grade-point average. Students also can be admitted at the end of the freshman year by earning a 3.5 GPA on 30 completed hours, or through the end of the sophomore year by earning a 3.5 on 60 completed hours (the total does not include Advanced Placement, International Baccalaureate, or CLEP credit).

## **COLLEGE SCHOLARSHIPS**

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The Walton Family Charitable Support Foundation endowed two major scholarships for incoming freshmen to be administered by the Honors College. The Foundation also endowed funds for current honors students for study abroad and undergraduate research.

Honors College Fellowships provide \$50,000 over a four-year period for outstanding incoming freshmen. A separate application is required (applications are available on the Honors College Web page). The application deadline

will be posted on the Honors College Web page at <http://honorscollege.uark.edu>. Students will also be required to interview for the fellowships. The award covers tuition, room and board, and provides additional monies for the purchase of a computer and for study abroad.

Honors College Academy Scholarships provide \$16,000 over a four-year period for outstanding incoming freshmen from under-represented counties in Arkansas. The application for admission serves as the application for this scholarship.

Honors College Study Abroad Grants are available to competitive students in the Honors College who have completed a minimum of 15 hours, 6 of which must be in honors. A separate application is required and is available in the Honors College Office. Deadlines are October 15 and February 15.

Honors Undergraduate Research Grants are available to competitive students in the Honors College who have completed a minimum of 15 hours, 6 of which must be in Honors. A separate application is required and is available on the Honors College Web page: [honorscollege.uark.edu](http://honorscollege.uark.edu). The application includes a five-page summary of the proposed research and a detailed letter of support from the research mentor. Deadlines are October 15, February 15, and June 15.

## **STUDENT ORGANIZATIONS**

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The Honors College Student Association is a registered student organization sponsored by the Honors College at the University of Arkansas. Membership is open to all University of Arkansas honors students, with no membership fees or dues, and is designed to provide an honors community, uniting honors students from all colleges on campus. Members participate in campus recruiting events and frequently serve as honors liaisons to visiting groups. Their newsletter Castalia is published each semester. Additional information is available on the Honors College Web site at <http://honorscollege.uark.edu/>.

## **COLLEGE ACADEMIC REGULATIONS**

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The Honors College wishes to foster an environment of intellectual interaction and development across colleges. To graduate with honors from any college requires a minimum of 12 honors credits and the completion of an undergraduate research project is required. A combination of Honors hours, thesis quality, and GPA requirements (Minimum 3.5) lead to Latin designation of Cum Laude, Magna Cum Laude or Summa Cum Laude. The specific requirements are set by the college or school of major. Registration for Honors courses is restricted to Honors students or other students who meet the Honors criteria and who have been approved by the Honors program offering the course.

# Interdisciplinary Studies

## MISSION AND OBJECTIVES

The University provides several options for students to pursue education more broadly than one field of undergraduate study might allow, including interdisciplinary and multidisciplinary programs. These programs allow broader instruction and research opportunities, especially in emerging fields that haven't reached the academic breadth to constitute a department in their own right or in cases in which collaboration between one or more departments allows faculty from each existing department to contribute to the interdisciplinary or multidisciplinary major. In the Catalog of Studies, requirements for each interdisciplinary program are listed in the chapter of the college or school that oversees the program.

One interdisciplinary minor, Microelectronics-Photonics, is administered by the Division of Interdisciplinary Studies in the Graduate School. The requirements for completing a minor in Microelectronics-Photonics are listed below.

## MICROELECTRONICS-PHOTONICS (MEPH)

Ken Vickers  
Program Director  
248 Physics  
479-575-2875  
Russell DePriest  
Assistant Program Director for microEP minor  
131 Engineering Hall  
479-575-4719  
microep@cavern.uark.edu  
<http://microEP.uark.edu>

### Biological Engineering Faculty:

- Professor Li
- Associate Professor Kim
- Assistant Professors Kavdia, Ye

### Chemical Engineering Faculty:

- Professors Beitle, Ulrich
- Associate Professor Roper
- Assistant Professors J. Hestekin, Servoss

### Chemistry Faculty:

- Professors Fritsch, Gawley, Peng, Stenken
- Assistant Professor Tian

### Civil Engineering Faculty:

- Professor Selvam

### Computer Science/Computer Engineering Faculty:

- Associate Professor Thompson
- Assistant Professor Di

### Electrical Engineering Faculty:

- Distinguished Professors Varadan (V.K), Varadan (V.V)
- Professors Ang, Balda, Manasreh, Mantooth, Naseem
- Associate Professors El-Shanawee, Ji
- Assistant Professor Yu
- Research Associate Porter

### Industrial Engineering Faculty:

- Associate Professor Mason

### Mechanical Engineering Faculty:

- Professor Malshe
- Associate Professors Gordon, Tung
- Assistant Professors Huang, Spearot, Wejinya, Zou

### Microelectronics-Photonics Faculty:

- Adjunct Professors DePriest, Foster

### Physics Faculty:

- Distinguished Professors Salamo, Xiao
- Professors Bellaiche, Singh
- Research Professor Vickers
- Associate Professors Fu, Oliver
- Assistant Professors Gross, Li, Tchakhalian
- Research Associate and Adjunct Professor Shultz

Microelectronics-Photonics (microEP) is an interdisciplinary program based in the Division of Interdisciplinary Studies in the Graduate School that prepares students for careers involving micro/nano materials, processing, and devices applied in areas such as photonics, microelectronics, bio/chemical analysis, etc. The microEP Graduate Program offers M.S. and Ph.D. degrees, as well as an undergraduate minor in Microelectronics-Photonics.

The purpose of this minor is to allow undergraduates in science and engineering to be able to capitalize on the research and educational core of the microEP Graduate Program as they prepare to enter the job market or compete for positions in top level graduate programs.

Requirements for a Minor in Microelectronics-Photonics: Three hours of required courses (ELEG 4203, and one of INEG 4323, INEG 4433, or INEG 4443). At least an additional 12 hours must be taken from the following undergraduate courses (BENG 4123, CHEM 4213, ELEG 4203, ELEG 4223, MEEG 4303, MEEG 4443, MEPH 488V, PHYS 3603, PHYS 4713, and PHYS 4213), or from other appropriate courses not on this list if approved first by the microEP Program and by the course instructor. See examples at the MicroEP Web site.

Students accepted into the microEP minor must attend an orientation session at the beginning of each semester as well as the monthly microEP graduate student research presentations. Students enrolled in the microEP minor must attend at least one public presentation of a Master of Science thesis in microEP or a Doctor of Philosophy dissertation in microEP each semester. Students wishing to declare this minor must apply through the microEP Program Web site, <http://microEP.uark.edu>, and be accepted into the minor at least two regular semesters before their graduation date.

# Dale Bumpers College of Agricultural, Food and Life Sciences

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## **Office of the Dean of the College**

E-108 Agricultural, Food and Life Sciences Building, 479-575-2034

### **Interim Dean**

Lalit R. Verma

### **Associate Dean**

Donna L. Graham

### **Coordinator of Advising and Retention**

Alice Griffin

### **Director of Honors Program**

Duane Wolf, 479-575-5739

### **Advising Office, Scholarships, Student Relations**

E-108 Agricultural, Food and Life Sciences Building, 479-575-2252

### **World Wide Web**

<http://bumperscollege.uark.edu/>

**E-mail:** [dbcfls@uark.edu](mailto:dbcfls@uark.edu)

## **MISSION AND OBJECTIVES**

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The mission of the College of Agricultural, Food and Life Sciences is to prepare graduates who are intellectually enriched, technically competent, environmentally conscious, and ethically responsible. We honor the land-grant tradition and respect the many values of its fabric and heritage while demonstrating sensitivity toward change for the future. Our goal is for our graduates to commit to being self-directed, lifelong learners and to be responsible leaders, possessing strong communication skills and problem-solving abilities.

To accomplish this, the broad curricula include basic courses in the general sciences and liberal arts, as well as the agriculture and human environmental sciences.

### **History and Organization**

As the state's land-grant university, the University of Arkansas has the responsibility for leadership in teaching, research, and service in the agricultural and human environmental sciences. This responsibility is shared with the Division of Agriculture.

The Bumpers College is an integral component of the University of Arkansas and addresses the teaching responsibility of the land-grant university. Its roots lie in the First Morrill Act of 1862, which created the land-grant system by providing a grant of land to each state for the establishment of a college "where the leading objective shall be, without excluding other scientific and classical studies and including military tactics, to teach such branches of learning as are related to agriculture and the mechanical arts in such manner as the legislatures of the state may prescribe to promote the liberal and practical

education of the industrial classes in the several pursuits and professions of life." Agricultural sciences have been taught at the University of Arkansas almost from the beginning of the institution in 1872. The University conferred the first degrees in agriculture in 1904.

Early instruction and outreach efforts focused on improving rural life for men, women, and children. Farm wives were interested in beautifying the home, food preparation and safety, and gardening. Foods and nutrition, bacteriology, chemistry, and other related subjects held a common scientific interest for both agriculture and home economics, so it naturally evolved that studies in home economics should develop within the realm of agricultural education. Domestic science classes were offered as early as 1909, and a department of home economics was established in 1913. The department was elevated to school status in 1994, and its name was changed to the School of Human Environmental Sciences.

The passage of the Hatch Act in 1887 and subsequent legislation made possible the Agricultural Experiment Station, the research component of the Division of Agriculture. Most faculty who teach in the Bumpers College also hold appointments in the Experiment Station and are able to incorporate active research into their teaching.

The dissemination of University research in agriculture and human environmental sciences is carried out by personnel in the Cooperative Extension Service, created by the Smith-Lever Act of 1914. Many Extension specialists also hold adjunct faculty status and bring their expertise to the teaching program.

It is this blending of teaching, research, and service functions that create a unique learning environment in the college. As students learn to relate basic areas of science to human needs, they study in laboratory-based classes and are taught in research facilities supported by the Division of Agriculture. Similarly, students are encouraged to intern with professionals in industry and governmental agencies, including the Cooperative Extension Service.

In recognition of the land-grant mission of the University and its commitment to serve the entire state, the Dale Bumpers College of Agricultural, Food and Life Sciences has worked cooperatively with numerous community colleges to organize the Arkansas Consortium for Teaching Agriculture (ACTA). ACTA is designed to facilitate the "seamless" transfer of students from community colleges to the Bumpers College. Coordinated advising, recruiting, and curricula development are working goals of the consortium. Students interested in transferring while enrolled at an ACTA partner school should contact the dean's office.

## **FACILITIES AND RESOURCES**

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The Dale Bumpers College of Agricultural, Food and Life Sciences is composed of ten academic departments and the School of Human Environmental Sciences. The college offers both undergraduate and graduate level degrees.

The Agricultural Food and Life Sciences building houses the dean's office

and the department of Animal Science and serves as the headquarters for the college academic functions. There are six other buildings on campus operated by the college including the Agriculture Building, Home Economics Building, Rosen Center, Plant Science Building, Agricultural Annex, and the Center of Excellence for Poultry Science. Additionally, the Food Science building, Alzheimer Laboratory, Abernathy Agri-Science laboratory, Biological and Agricultural Engineering Laboratory, Pauline Whitaker Animal Science Arena, and the Dorothy E. King Equine Science facilities are located at the Research and Extension Center north of the main campus. These serve as additional teaching laboratories or classroom facilities. Also, the Infant Development Center and the Nursery School are managed by the college to provide instructional training for the child development program.

Two distance-education classrooms are available for instructional use. A Teaching Resource Center, located in the Agriculture Building, provides support for faculty and graduate student instructors. Students can receive academic assistance through the Academic Enhancement Program (AEP) coordinated by the dean's office. Trained counselors provide guidance to students seeking extra assistance. Students can also seek assistance through the Enhanced Learning Center, a campus-wide resource.

## COLLEGE SCHOLARSHIPS

In addition to the scholarships awarded by the University, there are a number of scholarships available to students in agriculture and human environmental sciences made possible by generous gifts from many firms and individuals. To be considered for a college scholarship, students must first be admitted to the University. Most scholarships require students to be enrolled full-time, at least 12 credit hours per semester. A college scholarship application, which serves as an application to all available scholarships offered by the college, must be submitted by February 15 each year. A listing of various outside scholarships is available for review in the dean's office, E-108, Agricultural, Food and Life Sciences Building and on the college's Web site. There are also miscellaneous outside scholarships for which applications are available in some departmental offices. For more information on scholarships, contact the dean's office.

## STUDENT ORGANIZATIONS

**Agricultural Business Club** is for students interested in agricultural business and economics.

**Agricultural Communicators of Tomorrow (ACT)** is designed for students with an interest in agricultural communications.

**Agricultural Mechanization Club** is a student organization for those with an interest in agricultural technology.

**American Society of Agricultural Engineers, Student Branch, (ASAE)** is an organization for students interested in agricultural engineering.

**Apparel Studies Student Association (ASSA)** is an organization open to all students interested in the fashion industry.

**National Block and Bridle Club** is for students who are interested in any phase of animal science. Students with interests in dogs, cats, horses, cattle, sheep or swine will find this club a good place to become involved.

**Collegiate 4-H/FFA** is for any student who has been active in 4-H or FFA or has a current interest in service to these youth-oriented organizations. This club is especially designed for students interested in teaching agricultural education or working for the Extension Service.

**Collegiate Farm Bureau** was formed in 2002 with support from the Arkansas Farm Bureau Federation. Its goals are to motivate students to become involved in shaping agricultural policy for the state and the nation.

**The American Association of Family and Consumer Sciences (AAFCS)** offers student membership to all human environmental sciences majors. Monthly meetings highlight various phases of human environmental sciences and provide social contact with other majors. In addition, members become involved in local service projects and may attend statewide workshops and leadership training sessions.

**Crop, Soil, and Environmental Science Club** is a student organization for those interested in crops and soils through both an agricultural and environmental perspective.

**Family and Child Organization** is an organization for students who are interested in the welfare of young children. The organization, through programs, publications, and trips, offers students information about career opportunities in human development.

**Food Science Club** is an organization for those students interested in food science.

**GroGreen** The student organic farm is for students to learn about and practice sustainable and organic farm and garden practices.

**Horticulture Club** is a student organization for those interested in horticulture including floriculture, ornamentals, turf, small fruits and vegetables.

**Hospitality and Restaurant Management Club** is for students who are interested in the food and beverage, hotel operations and tourism aspects of the hospitality industry.

**Interior Design Organization (IDO)** is a student organization dedicated to representing the entire profession and encouraging the highest possible standards for the practice of interior design.

**Isely-Baerg Entomology Club** is open to those who wish to stimulate interest in the field of entomology, perform outreach programs for the public and to promote and encourage professional exchange of ideas in the field of entomology.

**Minorities in Agriculture, Natural Resources Related Sciences (MANRRS):** The purpose of this organization is to promote and implement initiatives which foster inclusion and advancement of members of ethnic/cultural groups under-represented in the agricultural and natural sciences and related fields in all phases of career preparation and participation.

**Plant Pathology Graduate Student Association (PPGSA)** is an organization open to graduate students interested in plant pathology or related fields.

**Poultry Science Club** is open to all students interested in any phase of the poultry industry or related fields.

**Pre-Vet Science Club** is for students interested in veterinary medicine and is especially designed for those students in the pre-veterinary medicine curriculum.

**Student Dietetic Association (SDA)** is an organization for students who are interested in the profession of dietetics. The goals are to promote growth in professional attitudes and to provide various programs of interest to the members.

**Turf Management Club** is a student organization open to all students interested in turfgrass management.

There are also numerous general organizations on the University campus, and students of the Dale Bumpers College of Agricultural, Food and Life Sciences participate in most of them. These include fraternities, sororities, honor and scholarship organizations, religious and music groups, sports organizations, and others.

**Alpha Zeta** is the professional honor fraternity for students of agriculture. To be invited to become a member, a student must rank in the upper two-fifths of the class and be recognized for leadership and character.

**Phi Upsilon Omicron** is the professional honor society for human environmental sciences students. To be eligible for invitation to membership, a student must rank in the upper 35 percent of the class and be recognized for character and leadership.

**Gamma Sigma Delta** is the honor fraternity for graduating seniors, graduate students, faculty, and alumni of the Dale Bumpers College of Agri-

cultural, Food and Life Sciences. Seniors must rank in the upper 25 percent of their class to be eligible for membership, but not more than 15 percent of the class may be elected for membership. The highest-ranking sophomore and the highest-ranking senior are recognized annually by the society.

**Alpha Tau Alpha** is a national honorary professional fraternity for those preparing to become teachers of agricultural education. Its mission is to develop a true professional spirit in the teaching of agriculture, to help train teachers of agriculture who shall be leaders in their communities, and to foster a fraternal spirit among students in teacher training in agricultural education.

## ACADEMIC ADVISING

Bumpers College advising mission is to enhance the educational experience of and maximize opportunities for students. Therefore, we are committed to a strong, effective academic advising program. Advising plays a significant role in the total process of educating students for lifelong learning. The adviser assists students with the development and implementation of their educational plans.

Research demonstrates that the more contact students have with faculty, the more likely they are to persist and complete their educational goals in a timely manner. Therefore, the college has adopted a faculty advisement model. The faculty adviser serves as a facilitator to assist students in maximizing their education potential. The advising relationship is a partnership between the student and the faculty adviser. It is dependent on effective communication and regular contact.

### Selection of a Major

A student who elects to major in some area of study in the college should plan the program with a faculty adviser. While undecided students are welcome, early selection of a major will permit better planning and proper sequencing of courses. The student and faculty adviser work closely to ensure that curriculum requirements are met in a timely fashion. A student uncertain about a major will be advised as an undeclared major through the dean's office.

## DEGREES OFFERED

All entering students (including freshmen, international and transfer students) admitted to the University of Arkansas, Fayetteville, are eligible to pursue a degree program in the Dale Bumpers College of Agricultural, Food and Life Sciences. Degrees offered are as follows:

- The Bachelor of Science in Agricultural, Food and Life Sciences (B.S.A.)
- The Bachelor of Science in Human Environmental Sciences (B.S.H.E.S.)
- The Bachelor of Interior Design (B.I.D.)

## MAJORS, CONCENTRATIONS AND MINORS

### Agricultural, Food and Life Sciences

#### B.S.A. Degree

##### Majors and Concentrations

- Agricultural Business (AGBS)
- Agricultural Business Management and Marketing (ABMM)
- Agricultural Economics (AGEC)
- Pre-Law (PRLW)
- Agricultural Education, Communication and Technology (AECT)
  - Agricultural Communications (ACOM)
  - Agricultural Education (AGED)
  - Agricultural Systems Technology Management (ASTM)

- Animal Science (ANSC)
- Crop Management (CPMG)
- Environmental, Soil, and Water Science (ESWS)
- Food Science (FDSC)
  - Food Science (FDSC)
  - Food Technology (FDTN)
- Horticulture, Landscape, and Turf Sciences (HLTS)
- Poultry Science (POSC)

##### Minors Offered

- Agricultural Business (AGBS-M)
- Agricultural Education (AGED-M)
- Agricultural Systems Technology Management (ASTM-M)
- Animal Science (ANSC-M)
- Crop Biotechnology (CPBT-M)
- Crop Management (CPMG-M)
- Entomology (ENTO-M)
- Environmental, Soil, and Water Science (ESWS-M)
- Equine Science (EQSC-M)
- Food Science (FDSC-M)
- Global Agricultural, Food and Life Sciences (AFLS-M)
- Horticulture (HORT-M)
- Journalism (JOUR-M)
- Landscape Horticulture (LHRT-M)
- Pest Management (PMGT-M)
- Plant Pathology (PLPA-M)
- Poultry Science (POSC-M)
- Turf Management (TURF-M)
- Wildlife Habitat (WLHA-M)

##### Certificates Offered

- Food Safety Manager Certificate of Proficiency (FMGR-CP)
- Hazard Analysis and Critical Control Point Coordinator Certificate of Proficiency (HCCP-CP)

In both certificates, students take a concentrated core of Web-based courses focused on the application of scientifically based food-safety systems through the application of HACCP systems. Applicants must have a B.S. degree or seven years of relevant experience in the food industry to be admitted. See page 90 for the list of courses.

### School of Human Environmental Sciences

#### B.S.H.E.S. or B.I.D. degree

##### Majors and Concentrations

- Apparel Studies (APST)
- Food, Human Nutrition and Hospitality (FHNH)
  - Dietetics (DIET)
  - General Foods and Nutrition (GFNU)
  - Hospitality and Restaurant Management (HRMN)
- General Human Environmental Sciences (HESC)
- Human Development, Family Sciences, and Rural Sociology (HDFS)
  - Child Development (CDEV)
  - Birth through Kindergarten (BRKD)
  - Lifespan (LSPN)
- Interior Design (IDES)

##### Minors Offered

- General Foods and Nutrition (GFNU-M)
- Global Agricultural, Food and Life Sciences (AFLS-M) – See page 77.
- Human Development and Family Sciences (HDFS-M)
- Interior Design (IDES-M)
- Journalism (JOUR-M) – See page 74.

Minors in other Colleges: Students in the College of Agricultural, Food and Life Sciences may pursue an academic minor in the Sam M. Walton College of Business or in the J. William Fulbright College of Arts and Sciences. These minors usually consist of 15 to 20 hours of course work. For requirements regarding minors, check the catalog under the department offering the minor. Students must notify the dean's office of their intention to pursue a minor.

### Special (Non-Degree Seeking) Students

While most students enrolled in the Dale Bumpers College of Agricultural, Food and Life Sciences work toward a degree, students who desire additional education of a specific nature but who do not wish to fulfill all requirements for a degree may enroll as special students. It is recommended that students declare a minor by the end of their sophomore year.

## GRADUATE STUDIES

The Graduate School of the University, in cooperation with the Dale Bumpers College of Agricultural, Food and Life Sciences, offers the Master of Science degree in each of its ten departments and in the School. Six doctoral degrees are offered. More detailed information regarding individual programs may be obtained by contacting the administrative office of each department, or by consulting the Graduate School Catalog.

## ACCREDITATIONS

The Bachelor of Science in Human Environmental Sciences (B.S.H.E.S.) degree programs are accredited by the Council for Professional Development of the American Association of Family and Consumer Sciences. The degree program in dietetics is accredited by the Commission on Accreditation for Dietetic Education of the American Dietetics Association. The Bachelor of Interior Design (B.I.D.) degree is accredited by the Council for Interior Design Accreditation (CIDA). The Nursery School and the Infant Development Center in the School of Human Environmental Sciences are accredited by the National Association for the Education of Young Children (NAEYC). The Bachelor of Science in Agricultural, Food and Life Sciences (B.S.A.) in food science is an approved program by the Institute of Food Technologists. Teacher education programs in agriculture and family and consumer sciences are coordinated with educational programs in the College of Education and Health Professions and are accredited by the National Council for Accreditation of Teacher Education (NCATE).

## OTHER PROGRAMS

### Pre-veterinary Medicine

Because Arkansas does not have a college of veterinary medicine, the Arkansas General Assembly has authorized funds for education in veterinary medicine at out-of-state institutions. The State Board of Higher Education is the designated agent for the State of Arkansas, and the Student Loan Authority is authorized to administer the program. Terms and conditions prescribed by the Student Loan Authority are as follows: the grant will cover only out-of-state tuition, and the student will pay his or her own fees and expenses.

Contracts have been negotiated with the Board of Control for Southern Regional Education for education in veterinary medicine at Louisiana State University and at Tuskegee University. Arrangements have also been made with the University of Missouri and Oklahoma State University. Under the

provisions of the legislation, only citizens of Arkansas are eligible. They must enroll in and complete the pre-veterinary medicine curriculum to satisfy the admission requirements of these colleges of veterinary medicine.

The pre-veterinary medicine program at the University of Arkansas is administered in the departments of Animal Science and Poultry Science of the Dale Bumpers College of Agricultural, Food and Life Sciences. There are faculty in these departments who help counsel and advise students regarding their pre-veterinary medicine program. There are also faculty veterinarians who provide some insight into the practice of veterinary medicine and are knowledgeable about many of the considerations encountered in establishing a practice upon graduation. Some of these veterinarians have been in private practice; others have been involved in full-time agricultural research since graduation from veterinary medicine and graduate school. Because there is a wide cross-section of experience among these faculty, students find their counsel valuable in planning a future in veterinary medicine.

While it is possible to complete requirements for admission to some colleges of veterinary medicine in two years, most students take three years or more to complete the requirements, and most complete a B.S. degree before being admitted. Students who carefully plan their work may complete a B.S. degree by transferring hours earned in the first two years at an accredited college of veterinary medicine back to the University of Arkansas, provided they complete certain degree requirements at the University prior to entering a school or college of veterinary medicine. These students must complete a minimum of 94 hours of a 124-hour program of prescribed courses. This will require three years and one or two 6-week summer terms for most students. Therefore, students should inform their advisers early in their program that they wish to be in a pre-vet degree program.

The Bumpers College of Agricultural, Food and Life Sciences is ready to assist students in fulfilling their pre-veterinary medicine requirements whether they desire to complete them in a two-year span or over three or four years. The supporting departments at the University, including chemistry, English, and biological sciences, all offer quality courses that give a student an excellent background for the pursuit of a degree in veterinary medicine.

To earn the professional degree, a student must complete the pre-veterinary medicine requirements and the four-year prescribed curriculum in one of the colleges of veterinary medicine.

**Required Examinations:** All required examinations are given on campus and administered by testing services (Hotz Hall 713, phone, 479-575-3948). Exams must be taken by late fall of the year prior to entering vet school. Students interested in taking examinations should contact testing services to schedule an examination date. All contract schools accept the Graduate Records Exam (GRE), which is given frequently.

Students applying for admission to Oklahoma State University must take the general test and the biology test of the GRE.

**Applications:** Students applying to Louisiana State University, Oklahoma State, and University of Missouri must fill out a Veterinary Medical College Application Service (VMCAS) form, available at their online site ([www.aavmc.org](http://www.aavmc.org)). Students must complete the application and have it postmarked by Oct. 1 of the year prior to beginning studies. Application forms for Tuskegee University may be obtained directly from Tuskegee University. Since requirements for the various veterinary schools periodically change, it is important that students check with their advisers about specific school requirements as they progress through the pre-veterinary requirements.

All students should contact the Coordinator of Veterinary Medicine, Dale Bumpers College of Agricultural, Food, and Life Sciences, AFLS B114, University of Arkansas, Fayetteville, AR 72701, phone 479-575-4351 in the spring prior to making fall application for admission to a veterinary school to verify that they can complete the requirements for the school they wish to attend. Pre-professional requirements and specific requirements for admission to colleges of veterinary medicine at Louisiana State University, Oklahoma State University,



University of Missouri, and Tuskegee University are listed with information on the Web for the department of Animal Science at [http://www.uark.edu/depts/animals/Vet\\_Curriculum\\_Requirements.htm](http://www.uark.edu/depts/animals/Vet_Curriculum_Requirements.htm).

## HONORS PROGRAM

The Bumpers College Honors Program provides students with opportunities for intellectual enrichment beyond the traditional undergraduate experience. This is accomplished through special honors courses, completion of an undergraduate honors thesis, and other significant activities. Students must maintain a GPA of 3.25 to remain in the program.

Students in the AFLS Honors Program are required to complete 6 hours of honors courses with the majority from AFLS Honors courses chosen from the following:

- AFLS 1011H Honors Freshman Orientation
- AFLS 3131H Honors: Management and Leadership
- AFLS 3211H Honors Professional Development
- AFLS 3231H Intro to Scientific Thinking & Methods - Logic, Reasoning, & Science Argumentation
- AFLS 3313H Honors Global Issues in AFLS
- AFLS 3412H Honors Proposal Development
- AFLS 3512H Rotations in Agric. Lab Research
- AFLS 4431H Honors: Exploring Ethics
- AFLS 401VH Honors Special Topics -- Topics include: Personal Excellence and Contemporary Readings.

Honors students are also required to complete 6 hours of thesis credit as AFLS 400VH Honors Thesis.

If Honors courses other than from the AFLS College are to be included as part of the 6 hours of honors coursework, the student must submit a written request to the AFLS Honors Faculty Committee for their consideration. This written request must be submitted to the AFLS Honors Program Director.

To support their research or creative projects, participants in the Honors Program are eligible to apply for undergraduate research grants from the AFLS college and the Honors College as well as Student Undergraduate Research Fellowships (SURF) awarded by the state. The results of the student's original research or creative project can be published in *Discovery*, the college undergraduate research journal. Honors students can also apply to the Honors College for Study Abroad and conference grants. The transcript and diploma of each honors graduate will designate the student as an honor graduate of the college who will be recognized as graduating with Honors Distinction. At the college commencement ceremony, each honors graduate will wear special regalia and have the title of his or her honors thesis and mentor's name listed in the graduation program.

## STUDY ABROAD

An educational experience outside the U.S. has become an integral component for today's student in higher education. The ability to compete and perform in the global arena requires an understanding of world cultures, economic systems, religions, trends, governments and politics. Students in the Bumpers College are encouraged to engage in study abroad that will lead to life-long partnerships, cultural awareness and understanding of the global dimensions of their majors. The college years provide the best opportunity for students to gain this understanding and experience through faculty-led group study tours; summer, semester or year-long study abroad; and international internships which closely relate to their career goals.

Bumpers College provides study abroad opportunities through its Global

Studies Program, directed by Raymond W. Barclay Jr., who spends significant time abroad arranging individual programs of study. Although the Global Studies Program often uses standard "off-the-shelf" study abroad programs, its hallmark is customizing study abroad experiences to meet the specific interests and goals of each Bumpers student. More than 250 Bumpers students have had an international study experience since its inception in 1997, studying in 25 different countries, each earning academic credit relating to their major and global interests. The college anticipates a total of 40 to 50 Bumpers students participating in the Global Studies Program during each calendar year.

Study abroad can also lead to enrollment in AFLS 3313H Honors Global Issues in Agricultural, Food and Life Sciences; or the minor in Global Agricultural, Food and Life Sciences for undergraduate students. Graduate opportunities are available for study in agricultural economics, agribusiness and related subjects via the UA's TransAtlantic Master of Science program at Ghent University, Belgium. Second language capability is helpful, but not required.

Bumpers students interested in a study abroad program or internships with full-time status usually can maintain their scholarships while abroad. Limited funding is available for travel grants through Bumpers and Honors colleges.

## COLLEGE ADMISSION REQUIREMENTS

All students seeking admission to the Dale Bumpers College of Agricultural, Food and Life Sciences must meet the general requirements for admission to the University. Students transferring from other colleges at the University of Arkansas or from other institutions are expected to meet the same entrance standard.

## COLLEGE ACADEMIC REQUIREMENTS

### Residency

All students must have a minimum residence requirement of 36 weeks and 30 semester hours. The senior year must be completed in residence on campus unless a senior has already met the minimum residency requirement. This student will be permitted to earn not more than 12 of the last 30 hours in extension or correspondence courses or in residence at another accredited institution granting the baccalaureate degree. No more than six of these 12 hours may be correspondence courses.

### All students must satisfy the following University Graduation requirements.

1. Complete a minimum of 124 semester hours.
2. Fulfill University Core Requirements of 35 hours. See page 40 for a list of courses that meet the requirements. Check requirements for each major as some majors require specific core courses.
3. Successfully complete ENGL 2003 Advanced Composition unless exemption is gained as detailed in the University catalog. See page 41.
4. Earn a grade-point average of 2.00 ("C" average) on all work attempted at the University of Arkansas.
5. Present no more than 68 semester hours of lower-division transfer course work (1000/2000 level) for degree credit.
6. Present no more than 25 percent in "D" grades earned at the University of Arkansas to meet degree requirements.

### Bumpers College Graduation Requirements

1. For the degree of Bachelor of Science in Agricultural, Food and Life Sciences, students must complete a minimum of 30 semester hours within Bumpers College.
2. For the degree of Bachelor of Science in Human Environmental Scienc-

es or Bachelor of Interior Design, students must complete a minimum of 30 hours within the School of Human Environmental Sciences at the University of Arkansas.

3. A minimum of 9 hours of Broadening electives (Bumpers College courses taken outside of departmental code).
4. A minimum of 6 hours of Communications courses to include COMM 1313 (3 hours) and a Communication Intensive Elective (3 hours) from an approved course list.
5. Students who are exempt from ENGL 1013 or ENGL 1023 must enroll in 3-6 hours of English, Communications, Literature or Foreign Languages to fulfill the college requirements of English / Communications.
6. A minimum of 39 hours of courses at the 3000-level or above.
7. In addition to university and college requirements students must meet other defined departmental requirements specific to each major and concentration. Bumpers College courses outside of the major may be included in departmental requirements.
8. General electives will vary by major. Electives may be selected to meet the requirements for a minor. Students are encouraged to meet with their adviser to discuss applying elective hours toward a minor.

**Rules Applying to Course Work Used for Degree Credit**

1. No credit will be given for duplicate coursework.
2. A maximum of six hours of internship and six hours of special problems may be counted for degree credit.
3. Elective courses used for degree credit may be chosen from any department in the University. These are subject to the approval of the academic adviser. Electives may be used to develop a minor.
4. Students are encouraged to join the University band, chorus, and judging teams, and to participate in debate, drama, athletics, etc. A total of six semester hours of elective credits in such activities may be counted toward a degree. The maximum elective credits in any one activity that may be counted toward a degree are as follows:
 

Band and/or chorus	4 hours
Drama and/or debate	4 hours
Judging teams	4 hours
Physical education activities	4 hours
5. Any course taken by correspondence, including Web-based courses, must be approved in advance in the dean's office if the credits earned in the course are to be applied toward a degree. This rule applies regardless of the school from which the course is taken.
6. All transfer course work to be applied toward the degree must be an approved course listed in the transfer equivalency guide maintained by the Registrar's office. For courses not listed in the guide, petitions can be submitted to the Dean's office by the student's academic adviser.
7. All study abroad courses must be approved in advance in the Dean's office if the credits earned in the courses are to be applied toward a degree.

**Requirements to Graduate with Honors**

Students who have demonstrated exceptional academic performance in baccalaureate degree programs will be recognized at graduation by the honors designation of *Cum Laude*, *Magna Cum Laude*, or *Summa Cum Laude*. To earn these distinctions, a student must meet the following criteria:

1. At least one-half of the degree course work must have been completed at the University of Arkansas, Fayetteville.
2. Only the grade-point average on course work completed at the University of Arkansas, Fayetteville, will be considered.
3. For each of the three distinctive honors, the student must have the minimum grade-point average indicated.
  - (a) *Cum Laude*: 3.50 to 3.74
  - (b) *Magna Cum Laude*: 3.75 to 3.89
  - (c) *Summa Cum Laude*: 3.90 to 4.00

4. Students may graduate with honors distinction without participating in the Honors Program.

**Additional Requirements**

Former students of the college who are readmitted after an absence of one year may be expected to meet the curriculum requirements in effect at the time of their readmission. Students should consult their academic adviser for degree planning before registering for classes.

Students interested in earning an additional bachelor's degree should refer to the University requirements on page 44.

**Grading System**

The Dale Bumpers College of Agricultural, Food and Life Sciences utilizes a plus/minus grading system that assigns numerical values to 12 different grades. These values are used for courses when grade-point averages are calculated. See page 37 for the method of calculating grade-point averages. The 12-step grading system with assigned values is as follows:

A.....	4.00	C .....	2.00
A- .....	3.67	C-.....	1.67
B+.....	3.33	D+ .....	1.33
B.....	3.00	D.....	1.00
B-.....	2.67	D- .....	0.67
C+.....	2.33	F .....	0.00

**DEPARTMENTAL MAJORS**

**AGRICULTURAL AND EXTENSION EDUCATION (AED)**

George W. Wardlow  
 Head of the Department  
 205 Agriculture Building  
 479-575-2035  
<http://www.uark.edu/depts/aecedhp/aeced/index.html>  
 • Professors Graham, Johnson, Wardlow  
 • Adjunct Professors Lyles, Baker  
 • Associate Professors Miller, Scott  
 • Assistant Professors Edgar (D.), Edgar (L.)  
 • Instructor Cox  
 • Adjunct Assistant Professors Burch, Penn

**Agricultural Education, Communication, and Technology (AECT)**

The department of agricultural and extension education offers a degree program in agricultural education, communication and technology. Students with this major are in constant demand due to the rapidly changing educational needs of the agricultural and natural resources industries. Graduates with this degree have a broad knowledge of agricultural disciplines. They are prepared as agricultural technology transfer specialists to enter a variety of careers in formal and non-formal teaching roles in either the public or private sector as agricultural educators, Extension agents, industry-based trainers, information specialists, or technology-management specialists. Students in agricultural education, communication and technology may choose one of three areas of concentration listed below, or, with adviser's approval, select courses from more than one concentration area.

**Agricultural Education Concentration (AGED)**

This area of concentration is designed for students who wish to receive initial teacher licensure to teach agricultural science in public schools.

**Agricultural Systems Technology Management Concentration (ASTM)**

Students planning a professional career related to technical operations and management in agricultural industry should enroll in this concentration. Graduates assume positions of leadership and responsibility in such areas as agricultural services and sales, agricultural management, agricultural production systems, product service, product testing, and service management. The program focuses on preparing students as problem solvers in the application, management and/or marketing of agricultural technology.

**Agricultural Communications Concentration (ACOM)**

This concentration is designed to produce graduates with both technical knowledge about the food and fiber industry and the communication skills needed to convey in an effective manner the story of agriculture to consumers, policy makers, and the public at large. Interpersonal and group communication, public relations, graphic art, video and television production, electronic communication, distance learning, video conferencing, and writing for the media are emphasized in this program.

**Requirements for a Major in Agricultural Education, Communication and Technology (See page 40 for University Core and page 70 for B.S.A. requirements)****Communications** (12 – 15 hours)

- \_\_ ENGL 1013 English Composition I
- \_\_ ENGL 1023 English Composition II
- \_\_ ENGL 2003 Advanced Composition or Exemption Elective – See page 41 for exemption information
- \_\_ COMM 1313 Fundamentals of Communication
- \_\_ AGED 3142/3141L Agricultural Communications and lab

**U.S. History or Government** (3 hours)

- \_\_ Choose 3 hours from U.S. History University Core courses

**Mathematics**, University Core Course (3 hours)

- \_\_ MATH 1203 College Algebra or higher level math

**Physical, Biological Sciences** (16 hours)

- \_\_ BIOL 1543/1541L Principles of Biology with lab
- \_\_ BIOL 2013/2011L General Microbiology and lab **or** PHYS 1044 Physics for Architects I with lab component or higher level
- \_\_ CHEM 1074/1071L Fundamentals of Chemistry **and** lab

**ACOM and ASTM Concentrations:**

- \_\_ Science or Math Elective (3 hours)

**AGED Concentration:**

- \_\_ Science Elective (3 hours)

**Fine Arts/Humanities** (6 hours)**ACOM and ASTM Concentrations:**

Choose 6 hours in two categories from Fine Arts, Humanities Core (categories a and b)

**AGED Concentration:**

- \_\_ WLIT 1113 World Literature I **or** WLIT 1123 World Literature II
- \_\_ FNAR Core Course or PHIL Core Course or HUMN Core Course

**Social Sciences** (9 hours)

- \_\_ AGECE 1103 Principles of Microeconomics or AGECE 2103 Principles of Agri Macroeconomics
- \_\_ PSYC 2003 General Psychology
- \_\_ Choose 3 hours from other listed fields of study in University Core

**Departmental Core** (26 hours)

- \_\_ AFLS 1011 Freshman Orientation

- \_\_ AGED 1001 Orientation to Agri-Extension Education
- \_\_ AGED 4003 Issues in Agriculture
- \_\_ AGME 1613/1611L Fundamentals of Agricultural Systems Technology and lab
- \_\_ AGME 2903 Applied Microcomputers
- \_\_ AGME 4011 Senior Seminar
- \_\_ ANSC 1032 Introduction to Animal Science **or** ANSCE 1051 Introduction to Livestock Industry
- \_\_ CSES/HORT 1203 Introduction to Plant Sciences
- \_\_ CSES 2013 Pest Management
- \_\_ CSES 2203 Soil Science
- \_\_ CSES 2201L Soil Science lab or CSES 355V(1) Soil Profile Description

**Additional Course Requirements for Agricultural Education Concentration (AGED) (44-45 hours)****Mechanical Technology Courses** (Choose 8 hours)

- \_\_ AGME 2123 Metals and Welding with lab component
- \_\_ AGME 3042 Ag Construction Technology
- \_\_ AGME 3102/3101L Small Power Units/Turf Equipment and lab
- \_\_ AGME 3153 Surveying Agri and Forestry
- \_\_ AGME 3173 Electricity in Agriculture with lab component
- \_\_ AGME 4203 Mechanized Systems Management with lab component

**Education Courses** (24 hours)

- \_\_ AGED 1122 Agri Youth Organizations
- \_\_ AGED 3133 Methods in Agri Education with lab component
- \_\_ AGED 4012 Program Development
- \_\_ AGED 4632 Teaching Diverse Populations
- \_\_ AGED 4843 Methods in Ag Labs
- \_\_ CIED 1002 Intro to Education **and**
- \_\_ AGED 1031 Early Field Experience
- \_\_ CIED 3023 Survey of Exceptionalities **or** CIED 4023 Teaching in Inclusive Secondary Settings
- \_\_ CIED 3033 Classroom Learning Theory
- \_\_ HLSC 3633 First Responder-First Aid or equivalent (If student has completed Red Cross Life Saver certification, choose 3 hours of general electives.)

**Other requirements for AGED Concentration (12-13)**

- \_\_ AGED 457V Internship (6 hours)
  - \_\_ HORT Elective (3 hours)
  - \_\_ Science Elective (3-4 hours) – CHEM 2613/2611L required for Science Teacher Licensure
- Electives (May select a minor) (1-5 hours)

**124 Total Hours****Additional Course Requirements for Agricultural Communications Concentration (ACOM) (35 hours)**

- \_\_ COMM 2303 Public Speaking
- \_\_ JOUR 1023 Media and Society
- \_\_ JOUR 1033 Fundamentals of Journalism with lab component
- \_\_ AGED 3153 Leadership Development in Ag
- \_\_ AGED 3243 Ag Reporting and Feature Writing
- \_\_ AGED 3942 Professional Development in Agricultural Communications
- \_\_ AGED 4143 Electronic Communications in Agriculture
- \_\_ AGED 4243 Graphic Design in AFLS Productions
- \_\_ AGED 4343 Communication Campaigns in Agriculture

- \_\_ EXED 475V Internship in Extension (3 hours)
- Choose 6 hours from:
- \_\_ AGED 4443 Methods of Technological Change
- \_\_ COMM 3303 Small-Group Communication
- \_\_ COMM 3703 Organizational Communication
- \_\_ JOUR 2013 News Reporting I
- \_\_ JOUR 2032/2031L Broadcast News Reporting I and lab
- \_\_ JOUR 2332/2331L Photo Journalism I and lab
- \_\_ JOUR 3023 News Reporting II with lab component
- \_\_ JOUR 3072/3071L Broadcast News Reporting II and lab
- \_\_ JOUR 3743 Public Relations Principles
- Electives (May select a minor) (11-14 hours)

**124 Total Hours**

**Additional Course Requirements for Agricultural Systems Technology Management Concentration (ASTM) (32 hours)**

- \_\_ AGEC 2303 Intro to Agribusiness
- \_\_ AGEC 3303 Food and Agricultural Marketing
- \_\_ AGEC 3403 Farm Business Management
- \_\_ AGED 3153 Leadership Development in Agriculture
- \_\_ AGME 3102/3101L Small Power Unit/Turf Equipment and lab
- \_\_ AGME 3173 Electricity in Agriculture with lab component
- \_\_ EXED 475V Internship in Extension (3 hours)
- \_\_ Science or Math Elective (3-4 hours)
- Choose 7-8 hours from:
- \_\_ AGME 2123 Metals and Welding with lab component
- \_\_ AGME 3153 Surveying Agriculture and Forestry
- \_\_ AGME 4203 Mechanized Systems Management with lab component
- \_\_ AGME 4973 Irrigation with lab component
- \_\_ ENSC 3603 GIS for Environmental Science
- \_\_ GEOS 3543 Geographic Info Science
- \_\_ GEOS 4523 Computer Mapping
- \_\_ GEOG 4593 Intro to GPS
- \_\_ PHYS 220V Introduction to Electronics I
- \_\_ PHYS 320V Introduction to Electronics II
- Electives (May select a minor) (14-17 hours)

**124 Total Hours**

**Agricultural Education, Communication and Technology Nine-Semester Degree Program**

Students wishing to follow the degree plan in Agricultural Education, Communication and Technology should see page 42 in the Academic Regulations chapter for university requirements of the program. The Agricultural Education, Communication and Technology major has three concentrations: Agricultural Education, Agricultural Systems Technology Management, and Agricultural Communications.

Fall Semester Year 1	
1	AFLS 1011 Freshman Orientation
1	AGED 1001 Orientation to Agricultural/Extension Education
2	AGED 1122 Ag Youth Organizations for AGED concentration
4	AGME 1613/1611L Fundamentals of Agricultural Systems Technology and lab
3	AGME 2903 Applications of Microcomputers
2	ANSC 1032 Introductory Animal Sciences

1	ANSC 1051 Introduction to the Livestock Industry
3	University Core ENGL 1013 Composition I
<b>15-17</b>	<b>Semester hours</b>
Spring Semester Year 1	
4	BIOL 1543/1541L Principles of Biology and lab
3	CSES/HORT 1203 Introduction to Plant Sciences
3	University Core ENGL 1023 Composition II
3	University Core MATH 1203 College Algebra or higher math
3	PSYC 2003 General Psychology
<b>16</b>	<b>Semester hours</b>
Fall Semester Year 2	
3	AGED 1103 Principles of Ag Microeconomics or AGEC 2103 Principles of Ag Macroeconomics
3	COMM 1313 Fundamentals of Communication
5	CHEM 1074/1071L Fundamentals of Chemistry and lab
3	ENGL 2003 Advanced Composition or Exemption Elective
3	Concentration Related Elective
<b>17</b>	<b>Semester hours</b>
Spring Semester Year 2	
4	CHEM 2613/2611L Organic Physiological Chemistry and lab
3	CSES 2013 Pest Management
3	History University Core Elective
6	Concentration Electives
<b>16</b>	<b>Semester hours</b>
Fall Semester Year 3	
3	AGED 3142/3141L Ag Communications and lab
4	BIOL 2013/2011L General Microbiology and lab or PHYS 1044 Physic for Architects I with lab component
3	CSES 2203 Soil Science
1	CSES 2201L Soil Science Lab or CSES 355V Soil Profile Description
3	Fine Arts/Humanities University Core Elective
3	Concentration Elective
<b>17</b>	<b>Semester hours</b>
Spring Semester Year 3	
3	AGED 3153 Leadership Development in Agriculture (ACOM & ASTM concentration or elective for AGED)
3	Social Science University Core Elective
3	Science or Math Electives
3	Fine Arts/Humanities Core (WLIT 1113 for AGED)
3-5	Concentration Electives
<b>15-17</b>	<b>Semester hours</b>
Summer Semester Year 3	
3	EXED 475V Internship in Extension (ACOM & ASTM Concentration) or
2	AGED 475V Internship in Agri Educ (AGED Concentration for Teacher Licensure)
<b>2-3</b>	<b>Semester hours</b>
Fall Semester Year 4	
3	AGED 4003 Issues in Agriculture
9-12	Concentration Electives
<b>12-15</b>	<b>Semester hours (15 semester hours for AGED)</b>
Spring Semester Year 4	
1	AGME 4011 Senior Seminar
7-13	Concentration Electives
4	AGED 475V Internship in Agri Educ (AGED Concentration for teacher licensure)
<b>12-14</b>	<b>Semester hours</b>
<b>124</b>	<b>Total Hours</b>

**Minor in Agricultural Communications (ACOM-M)**

The Agricultural Communications Minor will consist of 18 hours to include the following:

- \_\_ AGED 3142/3141L Agricultural Communications and lab

- \_\_ AGME 2903 Applications of Microcomputers
- \_\_ JOUR 1033 Fundamentals of Journalism with lab component

Choose 9 hours from:

- \_\_ AGED 3243 Ag Reporting and Feature Writing
- \_\_ AGED 3942 Professional Development in Ag Communications
- \_\_ AGED 4143 Electronic Communications in Agriculture
- \_\_ AGED 4243 Graphic Design in AFLS Productions
- \_\_ AGED 4343 Communication Campaigns in Agriculture

A student planning to minor in Agricultural Education must notify the program adviser.

### Minor in Agricultural Education (AGED-M)

The Agricultural Education Minor will consist of 22 hours to include the following:

- \_\_ CIED 1002 Introduction to Education
- \_\_ AGED 1031 Introduction to Early Field Experience
- \_\_ AGED 1122 Agricultural Youth Organizations
- \_\_ AGME 2903 Applications of Microcomputers
- \_\_ CIED 3023 Survey of Exceptionality or CIED 4023 Teaching in Inclusive Secondary Settings
- \_\_ CIED 3033 Classroom Learning Theory
- \_\_ AGED 3133 Methods in Agricultural Education with lab component
- \_\_ AGED 4012 Program Development
- \_\_ AGED 4843 Methods in Agricultural Laboratories

A student planning to minor in Agricultural Education must notify the program adviser.

### Minor in Agricultural Systems Technology Management (ASTM-M)

The Agricultural Systems Technology Management Minor will consist of 18 hours to include the following:

- \_\_ AGME 1613 Fundamentals of Agricultural Systems Technology
  - \_\_ AGME 2903 Agricultural and Human Environmental Sciences Applications of Microcomputers or equivalent
- Choose 12 hours from:
- \_\_ AMGE 1611 Fundamentals of Agricultural Systems Technology Lab
  - \_\_ AGME 2123 Metals and Welding with lab component
  - \_\_ AGME 3153 Surveying in Agriculture and Forestry
  - \_\_ AGME 3102/3101L Small Power Units/Turf Equipment and lab
  - \_\_ AGME 3173 Electricity in Agriculture with lab component
  - \_\_ AGME 4203 Mechanized Systems Management with lab component
  - \_\_ AGME 4973 Irrigation with lab component
  - \_\_ ENSC 3603 GIS for Environmental Science

A student planning to minor in Agricultural Systems Technology Management must notify the program adviser for consultation and more detailed information.

### Minor in Journalism (JOUR-M)

The Journalism Minor allows for a combination of training in journalism with a specialization in agriculture or human environmental sciences. Its purpose is to prepare the student for employment with firms and institutions that produce agricultural or human environmental sciences publications or employ public relations personnel.

Students interested in a journalism minor may choose from one of three areas:

- Print Journalism (18 semester hours)
- \_\_ JOUR 1023 Media and Society

- \_\_ JOUR 1033 Fundamentals of Journalism with lab component
  - \_\_ JOUR 2013 News Reporting I
  - \_\_ JOUR 3013 Editing
  - \_\_ JOUR 3123 Feature Writing
  - \_\_ JOUR 3633 Media Law
- Broadcast Journalism (18 semester hours)
- \_\_ JOUR 1023 Media and Society
  - \_\_ JOUR 1033 Fundamentals of Journalism with lab component
  - \_\_ JOUR 2032/2031L Broadcast News Reporting I and lab
  - \_\_ JOUR 3072/3071L Broadcast News Reporting II and lab
  - \_\_ JOUR 3633 Media Law
  - \_\_ JOUR 4863 Television News Reporting I with lab component
- Print and Broadcast Journalism (18 semester hours)
- \_\_ JOUR 1023 Media and Society
  - \_\_ JOUR 1033 Fundamentals of Journalism with lab component
  - \_\_ JOUR 2013 News Reporting I
  - \_\_ JOUR 2032/2031L Broadcast News Reporting I and lab
  - \_\_ JOUR 3072/3071L Broadcast News Reporting II and lab
  - \_\_ JOUR 3633 Media Law

A student interested in a Journalism minor must notify his or her major adviser for detailed information. The minor is coordinated by the department of Agricultural and Extension Education in consultation with the department of Journalism.

SEE PAGES 312, 346, AND 313 FOR AGRICULTURAL AND EXTENSION EDUCATION COURSES (AGED, EXED, OR AGME).

### AGRICULTURAL ECONOMICS AND AGRIBUSINESS (AEAB)

Steve A. Halbrook  
 Head of the Department  
 217 Agriculture Building  
 479-575-2256

<http://www.uark.edu/depts/agriecon/>

- Professors Ahrendsen, Cochran, Dixon, Goodwin, Halbrook, Nayga, Popp (M.), Wailes
- Adjunct Professors Bryant, Miller
- Associate Professors McKenzie, Parsch, Popp (J.), Rainey, Thomsen
- Assistant Professors Flanders, Griffin, Nalley

The agricultural business degree program provides education suited to career opportunities in farm management, agricultural business management, and agricultural marketing in both the domestic and international areas.

Managers of farms and agricultural businesses are continually required to make organizational and operational decisions. The basic skills and knowledge needed for making sound decisions are provided by the agricultural business curriculum. Students may elect to specialize in areas compatible with their personal objectives, depending upon the extent of accounting and business orientation desired.

Students educated in agricultural business are in demand for positions in agricultural industries, farm operation, marketing agencies, agricultural service organizations, state and federal agencies, and numerous other positions. For those who go on to graduate school, teaching and research positions are available with land grant colleges as well as with other institutions. Three concentrations are available to meet career objectives:

- A. Agricultural Business Management and Marketing (ABMM)
- B. Pre-Law, for students preparing to attend law school (PRLW)
- C. Agricultural Economics, which emphasizes quantitative and analytical skills to prepare students for graduate school (AGEC).

### Requirements for a Major in Agricultural Business

(See page 40 for University Core and page 70 for B.S.A. requirements.)

**Communications** (12-15 hours)

- \_\_ ENGL 1013 Composition I
- \_\_ ENGL 1023 Composition II
- ENGL 2003 Advanced Composition or Exemption Elective – See page 41 for exemption information
- \_\_ COMM 1313 Fundamentals of Communication
- \_\_ Choose 3 hours from AGED 3142/3141L, ENGL 2013, ENGL 3053, COMM 2303, COMM 2323, COMM 2373, COMM 3303, COMM 3383, or JOUR 1033

**U.S. History or Government** (3 hours)

Choose 3 hours from U.S. History University Core - See page 40

**Mathematics and Statistics**

**ABMM, PRLW Concentrations** (9 hours):

- \_\_ MATH 1203 College Algebra
- \_\_ MATH 2053 Finite Mathematics
- \_\_ AGEC 2403 Quantitative Tools for Agribusiness **or** WCOB 1033 Data Analysis and Interpretation

**AGEC Concentration** (12-13 hours):

- \_\_ MATH 1203 College Algebra
- \_\_ MATH 2053 Finite Mathematics
- \_\_ MATH 2043 Survey of Calculus
- \_\_ WCOB 1033 Data Analysis and Interpretation **or** STAT 4003/4001L Statistical Methods and Lab

**Sciences** (8 hours)

Choose 8 hours from Science University Core courses - See page 40

**Fine Arts and Humanities** (6 hours)

Choose 6 hours in two categories from "State Minimum Fine Arts/ Humanities Core" (categories a and b) – See page 40

**Social Sciences** (9 hours)

- \_\_ PSYC 2003 General Psychology **or** SOCI 2013 General Sociology or RSOC 2603 Rural Sociology
- \_\_ AGEC 1103 Principles of Agricultural Microeconomics **or** ECON 2023 Principles of Microeconomics
- \_\_ AGEC 2103 Principles of Agricultural Macroeconomics **or** ECON 2013 Principles of Macroeconomics

**Departmental Core** (18 hours)

- \_\_ AGEC 2303 Introduction to Agribusiness
- \_\_ AGEC 3303 Food and Agricultural Marketing
- \_\_ AGEC 3403 Farm Business Management
- \_\_ AGEC 3503 Agricultural Law
- \_\_ AGEC 4143 Agricultural Finance
- \_\_ AGEC 4613 Domestic and International Agricultural Policy

**Bumpers College Broadening Electives** (9 hours)

Choose 9 hours outside of AGEC but within in the Bumpers College.

**General Electives** (20 hours)

**Additional Requirements for Agribusiness Management and Marketing Concentration** (27 hours)

Choose 3 hours from:

- \_\_ AGEC 2143 Agribusiness Financial Records
- \_\_ WCOB 1023 Business Foundations

And take:

- \_\_ AGEC 3373 Futures and Options Markets
- \_\_ AGEC 3313 Agribusiness Sales
- \_\_ AGEC 3413 Principles of Environmental Economics

Choose 6 hours from:

- \_\_ AGEC 4113 Ag Prices and Forecasting
- \_\_ AGEC 4313 Agribusiness Management
- \_\_ AGEC 4323 Agribusiness Entrepreneurship

\_\_ AGEC 4373 Advanced Price Risk Management

Choose 9 hours from:

- \_\_ MATH, STAT, AGEC or courses in WCOB or the Bumpers College.

**124 Total Hours**

**Additional Requirements for Pre-Law Concentration** (27 hours)

- \_\_ AGEC 2143 Agribusiness Financial Records
- \_\_ AGEC 3413 Principles of Environmental Economics
- \_\_ AGEC 3523 Environmental and Natural Resources Law

Choose 3 hours from:

- \_\_ AGEC 4313 Agricultural Business Management
- \_\_ AGEC 4323 Agribusiness Entrepreneurship

Choose 15 hours from at least two areas:

Area 1

- \_\_ BLAW 3033 Commercial Law
- \_\_ BLAW 3043 Law of Business Organization
- \_\_ WCOB 1012 Legal Environment of Business

Area 2

- \_\_ COMM 2303 Public Speaking
- \_\_ COMM 2373 Intro to Debate
- \_\_ COMM 3303 Small Group Communication
- \_\_ COMM 3383 Persuasion
- \_\_ COMM 3353 Argumentation: Reason in Communication
- \_\_ COMM 3443 Intro to Rhetorical Theory
- \_\_ COMM 4113 Legal Communication

Area 3

- \_\_ PHIL 2003 Intro to Philosophy
- \_\_ PHIL 2103 Intro to Ethics
- \_\_ PHIL 2203 Logic
- \_\_ PHIL 3103 Ethics and the Professions
- \_\_ PHIL 4143 Philosophy of Law

Area 4

- \_\_ PLSC 3103 Public Administration
- \_\_ PLSC 3153 Public Policy
- \_\_ PLSC 3243 Judicial Process
- \_\_ PLSC 4193 Administrative Law
- \_\_ PLSC 4253 The U.S. Constitution I
- \_\_ PLSC 4263 Supreme Court and Civil Rights

Area 5

- \_\_ AGEC (any upper level)

**124 Total Hours**

**3/3 Program**

Exceptional students in the Pre-Law concentration may enroll in the Law School in their fourth year provided that the following requirements have been met:

1. completed all University, college, and department core requirements for the pre-law concentration;
2. completed 12 hours in the specialization list for pre-law;
3. attained a cumulative grade-point average in all college or University course work of at least 3.50 without grade renewal;
4. attained a LSAT score of at least 159.

A student who has satisfied these requirements may substitute law school course work for the remaining total hours required for the bachelor's degree in agricultural business. It is a requirement of the Law School's accrediting standards that no student be admitted to Law School until they have completed at least three-fourths of the work necessary for the baccalaureate degree. The

requirements embodied in the 3/3 program satisfy this requirement.

**Additional Requirements for Agricultural Economics Concentration (24 hours)**

- \_\_ WCOB 1023 Business Foundations
- \_\_ WCOB 2033 Acquiring & Managing Human Capital
- \_\_ ECON 3033 Microeconomic Theory
- \_\_ ECON 3133 Macroeconomic Theory
- \_\_ AGEC 3373 Futures and Options Markets

Choose 3 hours from:

- \_\_ AGEC 4313 Agricultural Business Management
- \_\_ AGEC 4323 Agribusiness Entrepreneurship

Choose 6 hours from MATH or STAT or upper division electives from AGEC or WCOB.

**124 Total Hours**

The approved list of courses, check sheet, and degree program for all concentrations is available in the Agricultural Economics and Agribusiness departmental office.

**Agricultural Business Management and Marketing Concentration Eight-Semester Degree Program**

Students wishing to follow the degree plan in Agricultural Economics and Agribusiness should see page 42 in the Academic Regulations chapter for university requirements of the program. The Agricultural Economics and Agribusiness major has three concentrations: Agricultural Business Management and Marketing, Pre-Law, and Agricultural Economics.

Fall Semester Year 1	
3	University Core ENGL 1013 Composition I
3	University Core MATH 1203 College Algebra
3	History University Core Elective
3	AGEC 2103 Principles of Ag Macroeconomics
3	AGME 2903 or Bumpers College Broadening Elective
0	WCOB 1120 Computer Competency Requirement (if not AGME 2903 Application of Microcomputers)
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 1	
3	University Core ENGL 1023 Composition II
3	COMM 1313 Communication
3	AGEC 1103 Principles of Ag Microeconomics
3	MATH 2053 Finite Math
4	Science University Core Elective
<b>16</b>	<b>Semester hours</b>
Fall Semester Year 2	
3	Social Science University Core Elective
3	Fine Arts/Humanities University Core Elective
3	AGEC 3303 Food and Agri Marketing
3	AGEC 2143 Agribusiness Financial Records or WCOB 1023
3	General Elective
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 2	
3	AGEC 2403 Quantitative Tools for Agribusiness or WCOB 1033
4	Science University Core Elective
3	AGEC 2303 Intro to Agribusiness
3	Bumpers College Broadening Elective
3	General Elective
<b>16</b>	<b>Semester hours</b>
Fall Semester Year 3	
3	ENGL 2003 Advanced Composition or Exemption Elective
3	Communication Intensive Elective
3	AGEC 3403 Farm Business Management

3	AGEC 4143 Agriculture Finance
3	Specialization Elective
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 3	
3	Fine Arts/Humanities University Core Elective
3	AGEC 3503 Agriculture Law
3	AGEC 3413 Principles of Environmental Economics
3	AGEC 3313 Agribusiness Sales
3	AGEC 3373 Futures & Options Markets
3	General Elective
<b>18</b>	<b>Semester hours</b>
Fall Semester Year 4	
3	AGEC 4613 Domestic & International Ag Policy
3	AGEC 4313 Agribusiness Management or Specialization Elective
3	Specialization Elective
6	General Electives
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 4	
3	AGEC 4113 Ag Prices and Forecasting with lab component (odd years) OR AGEC 4373 Advanced Price Risk Management OR AGEC 4323 Agribusiness Entrepreneurship
3	AGEC 4113 Ag Prices and Forecasting with lab component (odd years) OR AGEC 4373 Advanced Price Risk Management OR AGEC 4323 Agribusiness Entrepreneurship OR Specialization Elective
3	Bumpers College Broadening Elective
5	General Electives
<b>14</b>	<b>Semester hours</b>
<b>124</b>	<b>Total Hours</b>

**Minor in Agricultural Business (AGBS-M)**

The Agricultural Business Minor will consist of 18 semester hours to include:

- \_\_ AGEC 1103 Principles of Agricultural Microeconomics
- \_\_ AGEC 2303 Introduction to Agribusiness

Choose 6 hours from:

- \_\_ AGEC 3303 Food and Agricultural Marketing
- \_\_ AGEC 3373 Futures and Options Markets
- \_\_ AGEC 3403 Farm Business Management
- \_\_ AGEC 3413 Principles of Environmental Economics
- \_\_ AGEC 4313 Agricultural Business Management; and

Choose 6 hours from:

- \_\_ AGEC 2103 Principles of Agricultural Macroeconomics
- \_\_ AGEC 2143 Agribusiness Financial Records
- \_\_ AGEC 2403 Quantitative Tools for Agribusiness
- \_\_ AGEC 3303 Food and Agricultural Marketing
- \_\_ AGEC 3313 Agribusiness Sales
- \_\_ AGEC 3373 Futures and Options Markets
- \_\_ AGEC 3403 Farm Business Management
- \_\_ AGEC 3413 Principles of Environmental Economics
- \_\_ AGEC 3503 Agricultural Law I
- \_\_ AGEC 3523 Environmental and Natural Resources Law
- \_\_ AGEC 4113 Agricultural Prices and Forecasting
- \_\_ AGEC 4143 Agricultural Finance
- \_\_ AGEC 4303 Advanced Agricultural Marketing Management
- \_\_ AGEC 4313 Agricultural Business Management
- \_\_ AGEC 4323 Agribusiness Entrepreneurship
- \_\_ AGEC 4373 Advanced Price Risk Management
- \_\_ AGEC 4613 Domestic and International Agricultural Policy
- \_\_ AGME 2903 Agricultural and HES Applications of Microcomputers
- \_\_ ECON 3033 Microeconomic Theory
- \_\_ ECON 3133 Macroeconomic Theory

- \_\_ MATH 2053 Finite Mathematics
- \_\_ POSC 4213 Integrated Poultry Management Systems

Additional upper-division courses in the Sam M. Walton College of Business may be substituted with approval, provided prerequisites for those courses have been satisfied outside the minor.

A student planning to minor in Agricultural Business should contact the program adviser for consultation and more detailed information.

### Minor in Global Agricultural, Food and Life Sciences (AFLS-M)

The Bumpers College offers a minor in global agricultural, food and life sciences to provide students throughout the college opportunities to complement their major field of study with an international component. It is designed to provide learning skills and international experiences leading to greater understanding of global issues in agriculture, human and environmental sciences and the ability to participate effectively in diverse cultures.

This minor will consist of 18 semester hours to include:

- \_\_ AFLS 2003 Introduction to Global Agricultural, Food and Life Sciences
- \_\_ AFLS 300V Study/Internship Abroad (3 to 6 hours)

Choose at least 3 hours from:

- \_\_ AFLS 3313H Honors Global Issues in AFLS (and study tour)
- \_\_ AGECE 4163 Agricultural and Rural Development
- \_\_ AGECE 4613 Domestic and International Agricultural Policy
- \_\_ HESCE 4653 Global Travel and Tourism Management;

Choose 6-9 hours from:

- \_\_ AFLS 3313H Honors Global Issues in AFLS (and Study Tour)
- \_\_ AGECE 4163 Agricultural and Rural Development
- \_\_ AGECE 4613 Domestic and International Agricultural Policy
- \_\_ ANTH 1023 Introduction to Cultural Anthropology
- \_\_ ANTH 3123 The Anthropology of Religion
- \_\_ ANTH 4253 Peoples and Cultures of World Regions
- \_\_ COMM 4343 Intercultural Communication
- \_\_ ECON 4633 International Trade Policy
- \_\_ ECON 4643 International Macroeconomics and Finance
- \_\_ ECON 4653 Global Competition and Strategy
- \_\_ FIIR 2813 Introduction to International Relations
- \_\_ FINN 3703 International Finance
- \_\_ Foreign Language (student's choice)
- \_\_ GEOG 4033 Geography of the Middle East
- \_\_ GEOG 4783 Geography of Europe
- \_\_ GEOG 4243 Political Geography
- \_\_ HESCE 4653 Global Travel and Tourism Management
- \_\_ HIST 3043 History of the Modern Middle East
- \_\_ HIST 3203 Colonial Latin America
- \_\_ HIST 4103 Europe in the 19th Century
- \_\_ PLSC 2813 Introduction to International Relations
- \_\_ PLSC 3803 International Organization
- \_\_ PLSC 3813 International Law
- \_\_ PLSC 3853 American Foreign Policy
- \_\_ Other approved courses with a global emphasis, with permission of the Global Studies director.

A student interested in a Global Agricultural, Food and Life Sciences minor must notify his or her major adviser for detailed information. The minor is coordinated by Raymond W. Barclay, Jr. of International Agriculture Programs, Global Studies Program, 425 HOLTZ Hall, rbarclay@uark.edu.

SEE PAGE 312 FOR AGRICULTURAL ECONOMICS AND AGRIBUSINESS (AGECE) COURSES.

### ANIMAL SCIENCE (ANSC)

Keith Lusby  
Head of the Department  
B114 Agricultural, Food, and Life Sciences Building  
479-575-4351

<http://www.uark.edu/depts/animals/>

- University Professor Yazwinski
- Professors Apple, Brown (A.H.), Coffey, Jennings, Johnson, Kegley, Kellogg, Lusby, Maxwell, Pennington, Roeder, Rorie, Rosenkrans, Troxel
- Adjunct Professors Brown (M.A.), Baird, Burke, Chewing, Coblentz, Laurence, Looper, Nugent
- Associate Professors Beck, Jones, Kreider, Pohlman, Powell
- Adjunct Associate Professor Friesen
- Assistant Professors Barnham, Gadberry, Jack
- Adjunct Assistant Professor Roeder (M.)
- Instructor Kutz

The animal science major is designed to provide the scientific and technical education to prepare students for positions of leadership and responsibility. Students gain valuable experience pertaining to the production of beef and dairy cattle, swine, horses, sheep, and companion animals. In addition, extensive study is offered in the specialized areas of animal health, breeding and genetics, meat science, nutrition, and physiology.

Students majoring in animal science are prepared for a variety of careers. Pre-veterinary, pre-medical, and pre-professional course requirements may be fulfilled while meeting degree requirements. Specific career opportunities include positions and services related to the production, merchandising, processing and distribution of meat, milk, and related products. Additional opportunities include field persons, farm and herd managers, and other agribusiness-related positions. With additional academic training, animal science majors may become extension livestock specialists, nutritionists, geneticists, and physiologists.

Students should consult an animal science adviser for specific course selections in the elective areas. With appropriate advising, students have an opportunity to complete at least one minor within the 124-hour degree program.

**Requirements for a Major in Animal Science** (See page 40 for University Core and page 70 for B.S.A. requirements)

#### Communications (12-15 hours)

- \_\_ ENGL 1013 Composition I
- \_\_ ENGL 1023 Composition II
- \_\_ ENGL 2003 Advanced Composition or Exemption Elective – See page 41 for exemption information
- \_\_ COMM 1313 Fundamentals of Communication
- \_\_ Communication Intensive Elective (See adviser for approved list.)

#### U.S. History University Core Course (3 hours)

Choose 3 hours from U.S. History University Core courses – See page 40

#### Mathematics University Core Course (3 hours)

- \_\_ MATH 1203 College Algebra or higher level math

#### Physical and Biological Sciences (17 hours)

- \_\_ BIOL 1543/1541L Principles of Biology and lab
- \_\_ BIOL 2013/2011L General Microbiology and lab
- \_\_ CHEM 1074/1071L Fundamentals of Chemistry and lab
- \_\_ CHEM 2613/2611L Organic Physiological Chemistry and lab

#### Fine Arts and Humanities (6 hours)

Choose 6 hours in two categories from “State Minimum Fine Arts/ Humanities Core” (categories a,b,c, or d) – See page 40



**Social Sciences University Core Courses** (9 hours)

Choose 9 hours from at least two listed fields of study – See page 40

**Animal Science Core** (22 hours)

- \_\_ ANSC 1001L Introductory Animal Sciences Laboratory
- \_\_ ANSC 1032 Introductory Animal Sciences
- \_\_ ANSC 1041 Introduction to Companion Animal Industry **or**  
ANSC 1051 Introduction to the Livestock Industry
- \_\_ ANSC 2252L Introduction to Livestock and Meat Evaluation
- \_\_ ANSC 2781 Career Preparation and Development
- \_\_ ANSC 3133 Animal Breeding and Genetics
- \_\_ ANSC 3143 Principles of Animal Nutrition
- \_\_ ANSC 3433 Fundamentals of Reproductive Physiology

Choose 6 hours from the following:

- \_\_ ANSC 4252 Cow-Calf Management
- \_\_ ANSC 4262 Swine Production
- \_\_ ANSC 4272 Sheep Production
- \_\_ ANSC 4283 Horse Production
- \_\_ ANSC 4452 Milk Production
- \_\_ ANSC 4482 Companion Animal Management
- \_\_ ANSC 4652 Stocker-Feedlot Cattle Management

**Animal Science Electives** (Choose 13 hours)

- \_\_ ANSC 3003 Applied Animal Parasitology
- \_\_ ANSC 3013 Parasitisms of Domesticated Non-Herbivores
- \_\_ ANSC 3032 Animal Physiology I
- \_\_ ANSC 3042 Animal Physiology II
- \_\_ ANSC 3123 Principles of Genetics
- \_\_ ANSC 3152/3151L Applied Animal Nutrition and lab
- \_\_ ANSC 3333 Diseases of Livestock
- \_\_ ANSC 3613 Meat Science

**Discipline-related Electives** (Choose 16 hours)

- |               |               |               |
|---------------|---------------|---------------|
| __ ANSC 2003  | __ ANSC 2213  | __ ANSC 2304  |
| __ ANSC 3282  | __ ANSC 3291  | __ ANSC 3723  |
| __ ANSC 3822  | __ ANSC 400V  | __ ANSC 401V  |
| __ ANSC 410V  | __ ANSC 4291  | __ AGEC 1103  |
| __ AGEC 2103  | __ AGEC 2303  | __ AGME 2903  |
| __ BIOL 1601L | __ BIOL 1603  | __ BIOL 2531L |
| __ BIOL 2533  | __ CSES 1203  | __ CSES 2013  |
| __ CHEM 1101L | __ CHEM 1103  | __ CHEM 1121L |
| __ CHEM 1123  | __ CHEM 2262  | __ CHEM 2272  |
| __ FDSC 2503  | __ PHYS 2011L | __ PHYS 2013  |
| __ PHYS 2031L | __ PHYS 2033  | __ POSC 2353  |
| __ POSC 3554  | __ WCOB 1012  | __ WCOB 1023  |

Or any upper division course in AEED, AGEC, AGME, AGST, BIOL, CHEM, CSES, FDSC, POSC, or WCOB.

**General Electives** (20-23 hours)

**124 Total Hours**

**Animal Science Eight-Semester Degree Program**

Students wishing to follow the degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

Fall Semester Year 1	
1	ANSC 1001L Intro to Animal Science Lab
2	ANSC 1032 Intro to Animal Sciences
1	ANSC 1041 Intro to Companion Animal Industry or ANSC 1051 Intro to Livestock Industry
3	ENGL 1013 Composition I
3	MATH 1203 College Algebra or higher level math

4	BIOL 1543/1541L Principles of Biology and lab
<b>14</b>	<b>Semester hours</b>
Spring Semester Year 1	
2	ANSC 2252L Intro to Livestock & Meat Evaluation
3	ENGL 1023 Composition II
3	Fine Arts/Humanities University Core Elective
3	Social Sciences University Core Elective
3	Discipline-related Elective as AFLS Broadening Elective
3	General Elective
<b>17</b>	<b>Semester hours</b>
Fall Semester Year 2	
1	ANSC 2781 Career Preparation & Development
3	ANSC 3433 Fundamentals of Reproductive Physiology
5	CHEM 1074/1071L Fund. of Chemistry and lab
3	COMM 1313 Fundamentals of Communication
3	History University Core Elective
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 2	
3	ANSC 3133 Animal Breeding & Genetics
4	CHEM 2613/2611L Organic Physiological Chemistry
3	ENGL 2003 Advanced Composition or Exemption Elective
3	Fine Arts/Humanities University Core Elective
3	Discipline-related Elective as AFLS Broadening Elective
<b>16</b>	<b>Semester hours</b>
Fall Semester Year 3	
5	Animal Science Electives
3	Communication Intensive Elective from an approved course list.
4	BIOL 2013/2011L General Microbiology and lab
3	Social Science University Core Elective
2	Discipline-related Elective
<b>17</b>	<b>Semester hours</b>
Spring Semester Year 3	
5	Animal Science Electives
3	ANSC 3143 Principles of Animal Nutrition
3	Social Science University Core Elective
3	Discipline-related Elective as AFLS Broadening Elective
3	General Elective
<b>17</b>	<b>Semester hours</b>
Fall Semester Year 4	
3	Animal Science Elective
2-4	ANSC Production/Management Elective
6-9	General Electives
<b>11-16</b>	<b>Semester hours</b>
Spring Semester Year 4	
2-4	ANSC Production/Management Elective
5	Discipline-related Electives
5-8	General Electives
<b>12-17</b>	<b>Semester hours</b>
<b>124</b>	<b>Total Hours</b>

**Minor in Animal Science (ANSC-M)**

A minor in Animal Science prepares students for jobs in the animal industries. A student planning to minor in animal science must consult with an animal science adviser. The minor consists of 20 hours to include the following:

- \_\_ ANSC 1001L Introductory Animal Sciences Lab
- \_\_ ANSC 1032 Introductory Animal Sciences
- \_\_ ANSC 1041 Introduction to Companion Animal Industry **or**  
ANSC 1051 Introduction to the Livestock Industry
- \_\_ ANSC 2252L Introduction to Livestock and Meat Evaluation
- \_\_ ANSC 3133 Animal Breeding and Genetics
- \_\_ ANSC 3143 Principles of Animal Nutrition

\_\_ ANSC 3433 Fundamentals of Reproductive Physiology

Choose 5 hours from:

\_\_ ANSC 4252 Cow-Calf Management

\_\_ ANSC 4262 Swine Production

\_\_ ANSC 4272 Sheep Production

\_\_ ANSC 4283 Horse Production

\_\_ ANSC 4452 Milk Production

\_\_ ANSC 4652 Stocker-Feedlot Cattle Management

### Minor in Equine Science (EQSC-M)

A minor in Equine Science prepares students for jobs in the equine industry and is available to all students. A student planning to minor in Equine Science must notify the program adviser for consultation and more detailed information.

The minor consists of 20 hours to include the following:

\_\_ ANSC 1032 Introduction to Animal Science

\_\_ ANSC 1041 Introduction to Companion Animal Industry

\_\_ ANSC 2003 Introduction to the Equine Industry

\_\_ ANSC 3433 Fundamentals of Reproduction Physiology

\_\_ ANSC 3723 Horse and Livestock Merchandising

\_\_ ANSC 3822 Equine Law

\_\_ ANSC 4283 Horse Production with lab component

Choose 3 hours from:

\_\_ ANSC 2213 Behavior of Domestic Animals

\_\_ ANSC 3003 Applied Animal Parasitology

\_\_ ANSC 3133 Animal Breeding and Genetics

\_\_ ANSC 3143 Principles of Animal Nutrition

\_\_ ANSC 3333 Diseases of Livestock

\_\_ ANSC 401V Internship (3 hours)

SEE PAGE 314 FOR ANIMAL SCIENCE (ANSC) COURSES.

### BIOLOGICAL ENGINEERING (BENG)

Carl Griffis

Interim Head of the Department

203 Engineering Hall

479-575-2351

<http://www.baeg.uark.edu/>

- Professors Griffis, Li, Loewer, Verma
- Adjunct Professors Ang, Clausen, Deaton, Ingels
- Associate Professors Bajwa, Carrier, Costello, Haggard, Kim, Matlock, Osborn
- Adjunct Associate Professors Beitle, Chaubey, Yang
- Assistant Professors Jin, Kavdia, Liang, Ye, Zaharoff
- Adjunct Assistant Professors Howell, Sharfirstein, Wimberly
- Research Professor Gardisser, VanDevender
- Research Associate Professors Tacker

The curriculum leading to the professional degree in biological engineering is under the joint supervision of the deans of the Dale Bumpers College of Agricultural, Food and Life Sciences and the College of Engineering. The engineering degree, Bachelor of Science in Biological Engineering (B.S.B.E.), is conferred by the College of Engineering and is described on page 268. Students who wish to receive this degree enroll in the College of Engineering.

SEE PAGE 320 FOR BIOLOGICAL ENGINEERING (BENG) COURSES.

### CROP, SOIL, AND ENVIRONMENTAL SCIENCES (CSES)

Robert K. Bacon

Interim Head of the Department

115 Plant Science Building

479-575-2354

<http://www.uark.edu/depts/agronomy/index.html>

- Distinguished Professors Boyd, Oosterhuis
- University Professors Oliver, Stewart, Wolf
- Professors Bacon, Bourland, Counce, Daniel, Daniels, Gbur, Longer, Miller, Mauromoustakos, Moldenhauer, Norman, Purcell, Rutledge, Sharpley, Smith, West, Wilson
- Associate Professors Brye, Burgos, Chen, Espinoza, Savin, Scott, Slaton, Srivastava
- Research Associate Professor Mattice
- Assistant Professors Anders, Barber, Gibbons, Kelley, Mozaffari, Northworthy, Ross, Stephenson
- Adjunct Assistant Professor Skulman

Courses in the Department of Crop, Soil, and Environmental Sciences provide fundamental and applied studies in two majors: Crop Management (CPMG) and Environmental, Soil, and Water Science (ESWS). Areas studied within the Crop Management major include plant breeding and genetics, crop and forage production, pest management (weeds, insects, and plant diseases), and soil fertility. The Environmental, Soil, and Water Science major includes courses in areas such as environmental science, water quality, soil science, soil and water conservation, and the sustainable productivity of natural resources.

Many graduates from both majors also choose to continue their education in graduate programs in a wide variety of disciplines both related and complementary to the B.S.A. degrees.

### CROP MANAGEMENT (CPMG)

David E. Longer

CPMG Coordinator

115 Plant Sciences Building

479-575-2354

Opportunities for employment and post-graduate study are numerous for graduates of the Department of Crop, Soil, and Environmental Sciences. Crop Management graduates become involved in crop production or find employment in public agencies providing support services for agriculture (e.g., Extension Service, State Plant Board, Natural Resources Conservation Service), or as consultants serving production agriculture, in the agrichemical and seed industries, and in agricultural research programs.

The crop management major includes courses in plant breeding and genetics, crop and forage production, pest management (weeds, insects, and plant diseases), and soil fertility.

#### Requirements for a Major in Crop Management

(See page 40 for University Core and page 70 for B.S.A. requirements)

##### Communications (15 hours)

\_\_ ENGL 1013 Composition I

\_\_ ENGL 1023 Composition II

\_\_ ENGL 2003 Advanced Composition **or** (if exempt)

ENGL 3053 Technical and Report Writing

\_\_ COMM 1313 Fundamentals of Communication

\_\_ CSES 3023 CSES Colloquium

##### U.S. History or Government (3 hours)

Choose 3 hours from U.S. History University Core – See Page 40.

##### Mathematics and Computer Science (6 hours)

\_\_ MATH 1203 College Algebra

\_\_ AGME 2903 Applications of Microcomputers **or** AGST 4023 Principles of Experimentation **or** STAT 2303 Principles of Statistics

**Physical and Biological Sciences (23-24 hours)**

- \_\_ BIOL 1543/1541L Principles of Biology and lab
- \_\_ BIOL 1613/1611L Plant Biology and lab
- \_\_ CHEM 1103/1101L University Chemistry I and lab
- \_\_ CHEM 1123/1121L University Chemistry II and lab
- \_\_ CHEM 2613/2611L Organic Physiological Chemistry and lab
- \_\_ BIOL 4304 Plant Physiology **or** ANSC/POSC 3123 Principles of Genetics **or** BIOL 2323 General Genetics

**Fine Arts and Humanities (6 hours)**

Choose 6 hours in two categories from “State Minimum Fine Arts/ Humanities Core” (categories a and b) – See page 40

**Social Sciences University Core Courses (9 hours)**

- \_\_ AGEC 1103 Agricultural Economics
- Choose 6 hours from other listed fields of study. Of these, 3 hours must be outside AGEC and ECON. Students minoring in Agricultural Business should choose AGME 2903 and AGEC 2103. See Page 40 for University Core

**Departmental Core (27 hours)**

General Agronomy (19 hours)

- \_\_ CSES 1011 Introduction to Crop, Soil, and Environmental Sciences
- \_\_ CSES 2103/2101L Crop Science and lab
- \_\_ CSES 2203/2201L Soil Science and lab
- \_\_ CSES 4013 Advanced Crop Science
- \_\_ CSES 4224 Soil Fertility with lab component
- \_\_ CSES 462V Internship **or** CSES 400V Special Problems (3 hours)

Choose 8 hours from Group A or B. At least 2 courses must be from Group A.

**Group A:**

- \_\_ CSES 3113 Forage Management
- \_\_ CSES 3312 Cotton Production
- \_\_ CSES 3322 Soybean Production
- \_\_ CSES 3332 Rice Production
- \_\_ CSES 3342 Cereal Grain Production
- \_\_ HORT 2303 Introduction to Turfgrass Management

**Group B:**

- \_\_ CSES 3214 Soil Resources and Nutrient Cycles
- \_\_ CSES 4103 Plant Breeding with lab component
- \_\_ CSES 4234 Plant Anatomy with lab component
- \_\_ CSES 4253 Soil Classification and Genesis with lab component
- \_\_ CSES 355V Soil Profile Description (1-2 hours)
- \_\_ CSES 400V Special Problems (1-6 hours)
- \_\_ PLPA 4333 Biotechnology in Agriculture

**Pest Management (10 hours)**

- \_\_ ENTO 3013 Introduction to Entomology
- \_\_ PLPA 3004 Principles of Plant Pathology
- \_\_ CSES 4133 Weed ID, Morphology and Ecology

**Choose 9 hours from either Group C or Group D for a minor:**

**Group C (Pest Management):**

- \_\_ CSES 4143 Principles of Weed Control
- \_\_ PLPA 4103 Plant Disease Control
- \_\_ ENTO 4123 Insect Pest Management **or** ENTO 4133 Advanced Applied Entomology

**Group D (Agricultural Business):**

- \_\_ AGEC 2303 Introduction to Agribusiness
- \_\_ AGEC 3403 Farm Business Management
- \_\_ AGEC 3303 Food and Agricultural Marketing **or** AGEC 3373 Futures and Options Markets **or** AGEC 3413 Principles of Environmental Economics **or**

AGEC 4313 Agricultural Business Management

**General Electives (16-18 hours)**

**124 Total hours**

**Crop Management Nine-Semester Degree Program**

Students wishing to follow the degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	MATH 1203 College Algebra or higher level math
4	BIOL 1543/1541L Principles of Biology and lab
3	History University Core Elective
1	CSES 1011 Introduction to CSES
<b>14</b>	<b>Semester hours</b>
Spring Semester Year 1	
4	CSES 2103/2101L Crop Science and lab
4	BIOL 1613/1611L Plant Biology and lab
3	ENGL 1023 Composition II
3	COMM 1313 Fundamentals of Communication
3	AGEC 1103 Agricultural Microeconomics
<b>17</b>	<b>Semester hours</b>
Fall Semester Year 2	
4	CHEM 1103/1101L Chemistry I and lab
3	ENGL 2003 Advanced Composition or if exempt ENGL 3053 Technical & Report Writing – See page 41
3	Social Science University Core Elective
3	Fine Arts/Humanities University Core Elective
2-3	Select one (1) course from Group A on checksheet
<b>15-16</b>	<b>Semester hours</b>
Spring Semester Year 2	
4	CHEM 1123/1121L Chemistry II and lab
3	AGME 2903 Applications of Microcomputers or AGST 4023 Principles of Experimentation or STAT 2303 Principles of Statistics
3	Social Science University Core Elective
3	Fine Arts/Humanities University Core Elective
2-3	Select one (1) course from Group A on checksheet
<b>15-16</b>	<b>Semester hours</b>
Fall Semester Year 3	
4	PLPA 3004 Principles of Plant Pathology with lab component
3	ENTO 3013 Introduction to Entomology
2-4	Select one (1) course from Group B on checksheet
4	CSES 2203/2201L Soil Science and lab
3	General Elective (Rec: CSES 2003 as pre-requisite for CSES 4133)
<b>16-18</b>	<b>Semester hours</b>
Spring Semester Year 3	
3-4	BIOL 2323 General Genetics or BIOL 4304 Plant Physiology or ANSC/POSC 3123 Principles of Genetics
4	CHEM 2613/2611L Organic Physiological Chemistry and lab
3	Select one (1) course from Group C or Group D for a minor
3	General Elective
<b>13-14</b>	<b>Semester hours</b>
Summer Semester Year 3	
3	CSES 462V Internship or CSES 400V Special Problems
Fall Semester Year 4	
3	CSES 3023 CSES Colloquium
3	CSES 4133 Weed Identification, Morphology & Ecology
4	CSES 4224 Soil Fertility with lab component
3	Select one (1) course from Group C or Group D for a minor

3	General Elective
<b>16</b>	<b>Semester hours</b>
<b>Spring Semester Year 4</b>	
3	CSES 4013 Advanced Crop Science
3	Select one (1) course from Group C or Group D for a minor
6	General Electives
1-3	General Elective
<b>13-15</b>	<b>Semester hours</b>
<b>124</b>	<b>Total Hours</b>

**ENVIRONMENTAL, SOIL, AND WATER SCIENCE (ESWS)**

Mary C. Savin  
 ESWS Coordinator  
 115 Plant Sciences Building  
 479-575-5740

Opportunities for employment and post-graduate study are numerous for graduates of the Department of Crop, Soil, and Environmental Sciences. Environmental, Soil, and Water Science graduates find jobs with environmental consulting companies, environmental education organizations, state agencies (e.g., Extension Service, Department of Environmental Quality, Health Department), federal agencies (e.g., Environmental Protection Agency, Natural Resources Conservation Service), municipalities and local environmental services (e.g., waste management and recycling, water and wastewater treatment facilities, parks and tourism departments), and a wide variety of private businesses.

The Environmental, Soil, and Water Science major includes courses in areas such as environmental science, water quality, soil science, soil and water conservation, and the sustainable productivity of natural resources.

**Requirements for a Major in Environmental, Soil, and Water Science** (See page 40 for University Core and page 70 for B.S.A. requirements)

- Communications** (12-15 hours)  
 \_\_ ENGL 1013 Composition I  
 \_\_ ENGL 1023 Composition II  
 \_\_ ENGL 2003 Advanced Composition or Exemption Elective – See page 41 for exemption information  
 \_\_ COMM 1313 Fundamentals of Communication  
 \_\_ CSES 3023 or AGED 3142/3141L

**U.S. History and Government** (3 hours)  
 Choose 3 hours from U.S. History University Core – See page 40

- Mathematics and Statistics** (6 hours)  
 \_\_ MATH 2043 Survey of Calculus  
 \_\_ AGST 4023 Principles of Experimentation or STAT 2023 Biostatistics or STAT 2303 Principles of Statistics

- Physical, Chemical and Biological Sciences** (35-36 hours)  
 \_\_ BIOL 1543/1541L Principles of Biology and lab  
 \_\_ BIOL 2013/2011L General Microbiology and lab  
 \_\_ BIOL 3863/3861L General Ecology and lab or ENSC 3223/3221L Ecosystem Assessment and lab  
 \_\_ BIOL 1613/1611L Plant Biology or CSES 1203 Introduction to Plant Sciences  
 \_\_ CHEM 1103/1101L University Chemistry I and lab  
 \_\_ CHEM 1123/1121L University Chemistry II and lab  
 \_\_ CHEM 2613/2611L Organic Physiological Chemistry and lab  
 \_\_ GEOL 1113/1111L General Geology and lab  
 \_\_ PHYS 2013/2011L College Physics I and lab

**Fine Arts and Humanities** (6 hours)

Choose 6 hours in two categories from “State Minimum Fine Arts/ Humanities Core” (categories a and b) – See page 40

**Social Sciences** (9 hours)  
 Choose 9 hours from at least two listed fields of study – See page 40

**ESWS Major Requirements** (29-31 hours)

**Environmental Science Core** (11 hours)

- \_\_ CSES 1011 Introduction to CSES
- \_\_ CSES 2203/2201L Soil Science and lab
- \_\_ ENSC 1003 Environmental Science
- \_\_ ENSC 3003 Introduction to Water Science

**Soil Science Core** (3-4 hours)

- \_\_ CSES 3214 Soil Resources with lab component
- \_\_ CSES 4224 Soil Fertility with lab component
- \_\_ CSES 4253 Soil Classification and Genesis with lab component
- \_\_ CSES/ENSC 4263 Environmental Soil Science

**Water Science Core** (3-4 hours)

- \_\_ ENSC 4023 Water Quality with lab component
- \_\_ GEOG 3333 Oceanography
- \_\_ GEOL 4033 Hydrogeology with lab component
- \_\_ BIOL 4814 Limnology with lab component

**Natural Resources Core** (Choose 12 hours from at least 2 groups)

- Methods/Techniques in Environmental Science
- \_\_ CSES 355V Soil Profile Descriptions
- \_\_ CSES/BENG 4803 Precision Agriculture
- \_\_ AGME 3153 Surveying in Agriculture and Forestry
- \_\_ ENSC 3603 GIS for Environmental Science
- \_\_ ENSC 4034 Analysis of Environmental Contaminants with lab component
- Environment and Society
- \_\_ AGECE 3413 Principles of Environmental Economics
- \_\_ AGECE 3503 Agricultural Law
- \_\_ ENSC 3933 Environmental Ethics
- \_\_ RSOC/SOCI 4603 Environmental Sociology
- Environmental Management
- \_\_ CSES 2013 Pest Management
- \_\_ ENSC 3103 Plants & Environmental Restoration
- \_\_ ENSC 3263 Environmental Soil and Water Conservation with lab component

**General Electives** (18-24 hours)

**124 Total hours**

Environmental science courses transferred from NorthWest Arkansas Community College, University of Arkansas at Fort Smith, and the University of Arkansas at Little Rock can be used to fulfill selected ESWS requirements. Consult an academic adviser to verify transfer applicability.

**Environmental, Soil, and Water Science Eight-Semester Degree Program**

Students wishing to follow the degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

<b>Fall Semester Year 1</b>	
3	ENGL 1013 Composition I
3	ENSC 1003 Environmental Science
1	CSES 1011 Introduction to CSES
4	Science University Core – BIOL 1543/1541L Principles of Biology and lab
3	Social Sciences University Core Elective
3	Fine Arts/Humanities University Core Elective
<b>17</b>	<b>Semester hours</b>
<b>Spring Semester Year 1</b>	
3	ENGL 1023 Composition II

3	History University Core Elective3-4	CSES 1203 Introduction to Plant Sciences or BIOL 1613/1611L Plant Biology and lab
3	Social Sciences University Core Elective	
3	General Elective (Recommended: MATH 1203 as pre-requisite for CHEM 1103 and MATH 2043 or could apply elective toward a minor)	
<b>15-16</b>	<b>Semester hours</b>	
<b>Fall Semester Year 2</b>		
3	ENGL 2003 Advanced Composition or Exemption Elective	
3	ENSC 3003 Introduction to Water Science	
4	Science University Core – CHEM 1103/1101L Chemistry I and lab	
3	COMM 1313 Fundamentals of Communications	
3	MATH 2043 Survey of Calculus	
<b>16</b>	<b>Semester hours</b>	
<b>Spring Semester Year 2</b>		
4	CHEM 1123/1121L Chemistry II and lab	
3	Fine Arts/Humanities University Core Elective	
3	Social Sciences University Core Elective	
4	GEOL 1113/1111L General Geology and lab	
3	General Elective (Recommended: MATH 1213 as pre-requisite for PHYS 2013 or could apply elective toward a minor)	
<b>17</b>	<b>Semester hours</b>	
<b>Fall Semester Year 3</b>		
4	CSES 2203/2201L Soil Science and lab	
4	PHYS 2013/2011L College Physics I and lab	
3	Water Science or Natural Resources Core	
6	General Electives as AFLS Broadening Electives (Could apply toward a minor)	
<b>17</b>	<b>Semester hours</b>	
<b>Spring Semester Year 3</b>		
4	BIOL 2013/2011L General Microbiology and lab	
4	CHEM 2613/2611L Organic Physiological Chemistry and lab	
3-4	Natural Resources Core	
3-4	Water Science or Soil Science Core (For Water Science: Recommended: ENSC 3003; Soil Science: Pre-at least CSES 2203)	
<b>14-16</b>	<b>Semester hours</b>	
<b>Fall Semester Year 4</b>		
3	CSES 3023 Colloquium or AGED 3142 & AGED 3141L	
4	ENSC 3223/3221L Ecosystems Assessment and lab or BIOL 3863/3861L General Ecology and lab	
3	Statistics or Natural Resources Core	
3-4	Soil Science or Natural Resources Core	
3	Natural Resources Core or General Elective (Could apply elective toward a minor)	
<b>16-17</b>	<b>Semester hours</b>	
<b>Spring Semester Year 4</b>		
3	Natural Resources Core	
3-4	Statistics or Natural Resources Core	
3	General Elective or Natural Resources Core	
3	General Elective as Broadening Elective (Could apply toward a minor)	
0-3	General Elective (May wish to take another elective. Could apply toward a minor)	
<b>12-16</b>	<b>Semester hours</b>	
<b>124</b>	<b>Total Hours</b>	

SEE PAGE 334 FOR CROP, SOIL, AND ENVIRONMENTAL SCIENCE (CSES) COURSES AND SEE PAGE 344 FOR ENVIRONMENTAL SCIENCE (ENSC) COURSES.

### Minor in Crop Biotechnology (CPBT-M)

A student planning to minor in Crop Biotechnology must notify the program adviser for consultation and more detailed information. The Crop Biotechnology Minor consists of 18 hours of courses and to include the following:

- \_\_ BIOL 2323 General Genetics or ANSC 3123 Principles of Genetics

- \_\_ BIOL 4304 Plant Physiology
- \_\_ CHEM 3813 Introduction to Biochemistry
- \_\_ CSES 402V Special Topics (two 1-hour courses taken in two different semesters)
- \_\_ CSES 4103 Plant Breeding
- \_\_ PLPA 4333 Biotechnology in Agriculture

### Minor in Crop Management (CPMG-M)

A student planning to minor in Crop Management must notify the program adviser for consultation and more detailed information. The Crop Management Minor consists of 18 semester hours of 2000-level courses or above, including the following:

- \_\_ CSES 2103 Crop Science
  - \_\_ CSES 2203 Soil Science
- Choose 12 hours from the following, with at least two courses from Group A.

#### Group A:

- \_\_ CSES 3113 Forage Management
- \_\_ CSES 3312 Cotton Production
- \_\_ CSES 3322 Soybean Production
- \_\_ CSES 3332 Rice Production
- \_\_ CSES 3342 Cereal Grain Production

#### Group B:

- \_\_ CSES 2003 Introduction to Weed Science
- \_\_ CSES 3214 Soil Resources and Nutrient Cycles
- \_\_ CSES 4013 Advanced Crop Science
- \_\_ CSES 4103 Plant Breeding
- \_\_ CSES 4133 Weed Identification, Morphology, and Ecology
- \_\_ CSES 4143 Principles of Weed Control
- \_\_ CSES 4224 Soil Fertility
- \_\_ CSES 4234 Plant Anatomy

### Minor in Environmental, Soil, and Water Science (ESWS-M)

A student planning to minor in Environmental, Soil, and Water Science must notify the program adviser for consultation and more detailed information. The Environmental, Soil, and Water Science Minor consists of 18 hours to include the following:

Environmental science (6 hours)

- \_\_ ENSC 1003 Environmental Science
- Choose 3 hours from:
- \_\_ AGECE 3413 Principles of Environmental Economics
- \_\_ AGECE 3503 Agricultural Law I
- \_\_ AGECE 3523 Environmental Science and Natural Resource Law
- \_\_ BIOL 3863/3861L General Ecology and lab
- \_\_ ENSC 3103 Plants and Environmental Restoration
- \_\_ ENSC 3223/3221L Ecosystems Assessment and lab
- \_\_ ENSC 3263 Environmental Soil and Water with lab component
- \_\_ ENSC 3603 GIS for Environmental Science
- \_\_ ENSC 3933 Environmental Ethics
- \_\_ ENSC 4034 Analysis of Environmental Contaminants with lab component
- \_\_ RSOC/SOCI 4603 Environmental Sociology

Soil Science (6 hours)

- \_\_ CSES/ENSC 2203 Soil Science
- Choose 3 hours from:
- \_\_ CSES 3214 Soil Resources and Nutrient Cycles with lab component
- \_\_ CSES 355V Soil Profile Descriptions
- \_\_ CSES 4224 Soil Fertility with lab component
- \_\_ CSES 4253 Soil Classification and Genesis with lab component
- \_\_ ENSC 4263 Environmental Soil Science

Water Science (6 hours)

- \_\_ ENSC 3003 Introduction to Water Science
- Choose 3 hours from:
- \_\_ ENSC 4023 Water Quality with lab component
- \_\_ GEOG 3333 Oceanography
- \_\_ GEOL 4033 Hydrogeology with lab component
- \_\_ BIOL 4814 Limnology with lab component

### Minor in Wildlife Habitat (WLHA-M)

A student planning to minor in Wildlife Habitat must notify the program adviser for consultation and more detailed information. The Wildlife Habitat Minor consists of 20 hours of courses to include the following:

#### Group A (13-14 hours):

- \_\_ BIOL 4734 Wildlife Management Techniques
- \_\_ CSES 1203 Plant Science **or** CSES 2103 Crop Science **or** BIOL 1613/1611L Plant Biology
- \_\_ CSES 2203 Soil Science
- \_\_ ENSC 3103 Plants and Environmental Restoration

Choose 6-7 hours from Groups B and C, choosing at least one course from each group.

#### Group B:

- \_\_ ENSC 1003 Environmental Science
- \_\_ ENSC 3003 Introduction to Water Science
- \_\_ ENSC 3223/3221L Ecosystems Assessment and lab
- \_\_ ENSC 3603 GIS for Environmental Science
- \_\_ BIOL 3863/3861L General Ecology and lab
- \_\_ CSES 462V Internship (with Arkansas Game and Fish Commission)

#### Group C:

- \_\_ AGECE 3413 Principles of Environmental Economics
- \_\_ BIOL 4763 Ornithology
- \_\_ BIOL 4833 Animal Behavior
- \_\_ CSES 2201L Soil Science Lab
- \_\_ CSES 355V Soil Profile Descriptions
- \_\_ CSES 4133 Weed ID, Morphology and Ecology
- \_\_ CSES 4253 Soil Classification and Genesis
- \_\_ ENTO 3013 Introduction to Entomology
- \_\_ GEOG 3003 Conservation of Natural Resources
- \_\_ GEOG 3343 Natural Regions of North America
- \_\_ GEOG 4093 Geography of Arkansas
- \_\_ RECR 1023 Recreation and Natural Resources

A maximum of 9 hours of CSES or ENSC coursework will be allowed to count toward the student's major as well as the Wildlife Habitat minor.

### ENTOMOLOGY (ENTO)

Robert N. Wiedenmann  
Head of the Department  
319 Agriculture Building  
479-575-2451  
<http://entomology.uark.edu/>

- University Professors Meisch, Stephen
- Professors Johnson (D.T.), Kring, Lorenz, Luttrell, McLeod, Steelman, Steinkraus, Teague, Wiedenmann
- Adjunct Professors Billings, Leonard, Reese, Thompson, Williamson
- Associate Professor Goggin, Szalanski
- Assistant Professors Akin, Bernhardt, Dowling, Hopkins, Loftin, Studebaker
- Curator Barnes

Entomology is the branch of science concerned with the study of insects and related organisms. It involves studies of their biology, structure, identification, economic significance, and population management. The major emphasis of the curriculum is understanding insect biology and applying that knowledge in an integrated approach to insect-pest management.

Entomology is a graduate degree at the University of Arkansas. Undergraduate students interested in entomology can pursue a minor in entomology or pest management. The requirements for a minor in pest management (PMGT) are listed on page 88.

### Minor in Entomology (ENTO-M)

The Entomology minor will consist of a minimum of 15 semester hours to include the following:

- \_\_ ENTO 3013 Introduction to Entomology
- \_\_ ENTO 4024 Insect Diversity and Taxonomy
- Choose 3 courses from:
- \_\_ ENTO 4013 Insect Behavior and Chemical Ecology with lab component
- \_\_ ENTO 4043 Apiculture with lab component
- \_\_ ENTO 4053 Insect Ecology with lab component
- \_\_ ENTO 4133 Advanced Applied Entomology with lab component
- \_\_ ENTO 400V Special Problems

SEE PAGE 345 FOR ENTOMOLOGY (ENTO) COURSES.

### FOOD SCIENCE (FDSC)

Jean-François Meullenet  
Interim Head of the Department  
N-201 Food Science Building  
479-575-4605  
<http://www.foodscience.uark.edu/>

- University Professors Hettiarachachy, Siebenmorgen
- Professors Buescher, Crandall, Howard, Meullenet, Proctor, Ricke, Wang
- Assistant Professors Devareddy, Lee, Morawicki
- Adjunct Faculty Members Ahn, Apple (N.), Brady, Foote, King, Li, Marcy, Morris (M.), Owens-Hanning, Pohlman, Prior

Food science is the application of science and technology to processing, packaging, safety, product invention and distribution of food products. Food science deals with all aspects of food between production and consumption and involves many disciplines, including chemistry, microbiology, nutrition, engineering and sensory science.

Food science prepares students for many interesting, rewarding and challenging professional career opportunities in industry, business, governmental and educational organizations associated with food and food-related products. Due to the diversity and abundance of opportunities available, students graduating with a B.S.A. in food science readily obtain employment or continue studies for graduate school. Additionally, requirements for several pre-professional programs can be fulfilled while meeting requirements for the food science degree.

Students may choose one of two areas of concentration for their degree program: Food Science (FDSC) or Food Technology (FDTN). The FDSC concentration at the University of Arkansas is one of only 53 programs in the United States and the only one in Arkansas that is approved by the Institute of Food Technologists. It provides students with a strong background in basic and applied sciences and food chemistry, microbiology, analysis, quality and engineering.

The FDTN concentration provides students interested in food business

and management careers with an integrated background in food science and business. With proper course selection, students in the food technology concentration can complete a minor in agribusiness or general business while completing their core requirements, thus leaving elective hours available for further educational enhancement.

Students in both concentrations are offered opportunities for research, internships, international experiences and selection of a minor.

**Requirements for a Major in Food Science (FDSC)** (See page 40 for University Core and page 70 for B.S.A. requirements)

**Communications** (12-15 hours)

- \_\_ ENGL 1013 Composition I
- \_\_ ENGL 1023 Composition II
- \_\_ ENGL 2003 Advanced Composition – See page 41 for exemption information.
- \_\_ COMM 1313 Fundamentals of Communication

**FDSC Concentration:**

- \_\_ ENGL 3053 Technical and Report Writing **or**
- AGED 3142/3141L Agri Communications and lab

**FDTN Concentration:**

- \_\_ AGED 3142/3141L Agri Communications and lab

**U.S. History and Government** (3 hours)

Choose 3 hours from U.S. History University Core – See page 40

**Mathematics and Statistics** (FDSC 13 hours; FDTN 12 hours)

- \_\_ MATH 1203 College Algebra

**FDSC Concentration:**

- \_\_ MATH 1213 Plane Trigonometry
- \_\_ MATH 2554 Calculus I
- \_\_ STAT 2303 Principles of Statistics **or** STAT 2023 Biostatistics **or** PSYC 2013 Intro to Statistics for Psychologists **or** AGST 4023 Principles of Experimentation

**FDTN Concentration:**

- \_\_ MATH 2043 Survey of Calculus
- \_\_ MATH 2053 Finite Mathematics
- \_\_ AGECE 2403 Quantitative Tools for Agribusiness **or** WCOB 1033 Data Analysis and Interpretation **or** STAT 2303 Principles of Statistics **or** AGST 4023 Principles of Experimentation

**Physical and Biological Sciences** (FDSC 27 hours; FDTN 20 hours)

- \_\_ BIOL 1543/1541L Principles of Biology and lab
- \_\_ BIOL 2013/2011L General Microbiology and lab
- \_\_ CHEM 1103/1101L University Chemistry I and lab
- \_\_ CHEM 1123/1121L University Chemistry II and lab

**FDSC Concentration:**

- \_\_ CHEM 2613/2611L Organic Physiological Chemistry and lab **or**
- CHEM 3603/3601L Organic Chemistry I and lab
- \_\_ CHEM 3813 Introduction to Biochemistry
- \_\_ PHYS 2013/2011L College Physics I and lab

**FDTN Concentration:**

- \_\_ CHEM 2613/2611L Organic Physiological Chemistry and lab

**Fine Arts and Humanities** (6 hours)

Choose 6 hours from two categories from “State Minimum Fine Arts, Humanities Core” (categories a and b) See page 40.

**Social Sciences University Core Courses** (9 hours)

**FDSC Concentration:**

Choose 9 hours from at least two listed fields of study – See page 40

**FDTN Concentration:**

- \_\_ AGECE 1103 Agricultural Microeconomics **and**
- \_\_ AGECE 2103 Agricultural Macroeconomics **or**
- \_\_ ECON 2013 Macroeconomics **and**
- \_\_ ECON 2023 Microeconomics

Choose 3 hours from other listed fields of study – See page 40

**Food Science Core** (21 hours)

- \_\_ AFLS 1011 Freshman Orientation
- \_\_ FDSC 1011 Food Science Orientation
- \_\_ FDSC 1103 Introduction to Food Science
- \_\_ FDSC 3103 Principles of Food Processing and lab
- \_\_ FDSC 4203 Quality Evaluation and Control and lab
- \_\_ FDSC 4304 Food Chemistry and lab
- \_\_ FDSC 4413 Sensory Evaluation and Process Development and lab
- \_\_ FDSC 4713 Food Product & Process Development and lab

**General Electives** (15-18 hours)

**Additional Requirements for Food Science Concentration** (15 hours)

- \_\_ HESC 1213 Nutrition in Health
- \_\_ FDSC 4114 Food Analysis with lab component
- \_\_ FDSC 4124 Food Microbiology with lab component
- \_\_ FDSC 4754 Eng. Prin. of Food Processing with lab component

**Additional Requirements for Food Technology Concentration** (23 hours)

- \_\_ FDSC 2503 Food Safety and Sanitation
  - \_\_ FDSC 3202 Introduction to Food Law
  - \_\_ FDSC 431V (3 hours) Internship in Food Science
  - \_\_ WCOB 1120 Computer Competency Requirement (AGME 2903 may be taken instead, but hours will be counted toward elective hours)
  - \_\_ AGECE 2143 Agribusiness Financial Records **or** WCOB 1023 Business Foundations
  - \_\_ AGECE 4313 Agricultural Business Management **or** WCOB 2033 Acquiring and Managing Human Capital
  - \_\_ AGECE 3303 Food and Agricultural Marketing **or** MKTG 3433 Introduction to Marketing Strategy
- Choose 6 hours of business coursework from the departmental codes: ACCT, AGECE, ECON, FINN, ISYS, MGMT, MKTG, TLOG or WCOB

**124 Total Hours**

**Food Science Eight- or Nine-Semester Degree Programs**

Students wishing to follow the degree plan in Food Science should see page 42 in the Academic Regulations chapter for university requirements of the program. The Food Science major has two concentrations: Food Science and Food Technology.

Fall Semester Year 1	
4	Science University Core BIOL 1543/1541L Principles of Biology and lab
3	University Core MATH 1203 College Algebra
3	University Core ENGL 1013 Composition I
1	AFLS 1011 Freshman Orientation
1	FDSC 1011 Food Science Orientation
3	University Core in Fine Arts/Humanities or Social Science or History
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 1	
3	FDSC 1103 Introduction to Food Science
3	CHEM 1103 University Chemistry I
3	University Core ENGL 1023 Composition II
3	University Core in Fine Arts/Humanities or Social Science or History (FDTN: AGECE 1103 Ag Microeconomics or ECON 2013 Macroeconomics)
FDSC concentration:	
3	MATH 1213 Plane Trigonometry

<b>FDTN concentration:</b>	
3	COMM 1313 Fundamentals of Communication
0	WCOB 1120 Computer Competency Requirement
<b>15</b>	<b>Semester hours</b>
<b>Fall Semester Year 2</b>	
4	Science University Core CHEM 1123/1121L University Chemistry II and lab
1	CHEM 1101L University Chemistry I lab (Credit earned when CHEM 1121L is completed with grade of "C" or better)
<b>FDSC concentration:</b>	
4	MATH 2554 Calculus I
3	COMM 1313 Fundamentals of Communication
3	University Core in Fine Arts/Humanities or Social Science or History
<b>FDTN concentration:</b>	
3	MATH 2053 Finite Mathematics
3	FDSC 2503 Food Safety and Sanitation
3	AGED 2143 Agribusiness Financial Records or WCOB 1023 Business Foundations
<b>14-15</b>	<b>Semester hours</b>
<b>Spring Semester Year 2</b>	
4	CHEM 2613/2611L Organic Physiological Chemistry and lab
3	University Core in Fine Arts/Humanities or Social Science or History (FDTN: AGEC 2103 Ag Macroeconomics or ECON 2023 Microeconomics)
3	Statistics Elective
<b>FDSC concentration:</b>	
4	BIOL 2013/2011L General Microbiology and lab
3	HESC 1213 Nutrition in Health
<b>FDTN concentration:</b>	
3	MATH 2043 Survey of Calculus
3	General Elective
<b>16-17</b>	<b>Semester hours</b>
<b>Fall Semester Year 3</b>	
6-7	FDSC 3103 Principles of Food Processing with lab component and FDSC 4203 Quality Evaluation Control with lab component (even years) or FDSC 4413 Sensory Evaluation of Food with lab component and FDSC 4304 Food Chemistry with lab component (odd years)
3	University Core in Fine Arts/Humanities or Social Science or History
3	General Elective
<b>FDSC concentration:</b>	
4	PHYS 2013/2011L College Physics I and lab
<b>FDTN concentration:</b>	
4	BIOL 2013/2011L General Microbiology and lab
<b>16-17</b>	<b>Semester hours</b>
<b>Spring Semester Year 3</b>	
3	ENGL 2003 Advanced Composition or Exemption Elective
0-3	FDSC 4713 Food Product and Process Development with lab component (odd years)
3	General Elective
<b>FDSC concentration:</b>	
0-4	FDSC 4124 Food Microbiology with lab component (even years)
4	FDSC 4754 Engineering Principles of Food Processing with lab component (odd years) or FDSC 4114 Food Analysis with lab component (even years)
3	AGED 3142/3141L Agri Communications and lab or ENGL 3053 Technical and Report Writing
<b>FDTN concentration:</b>	
0-2	FDSC 3202 Introduction to Food Law (even years)
3	Business Elective
3	University Core in Fine Arts/Humanities or Social Science or History (odd years)
<b>14-17</b>	<b>Semester hours</b>
<b>Summer Semester Year 3</b>	
<b>FDTN concentration:</b>	
3	FDSC 431V Internship in Food Science
<b>3</b>	<b>Semester hours</b>

<b>Fall Semester Year 4</b>	
6-7	FDSC 3103 Principles of Food Processing with lab component and FDSC 4203 Quality Evaluation and Control with lab component (even years) or FDSC 4413 Sensory Evaluation of Food with lab component and FDSC 4304 Food Chemistry with lab component (odd years)
3	General Elective
<b>FDSC concentration:</b>	
3	CHEM 3813 Introduction to Biochemistry
3	General Elective
<b>FDTN concentration:</b>	
3	AGED 4313 Agricultural Business Management or WCOB 2033 Acquiring and Managing Human Capital
3	AGED 3303 Food and Agricultural Marketing or MKTG 3433 Intro to Marketing Strategy
<b>15-16</b>	<b>Semester hours</b>
<b>Spring Semester Year 4</b>	
0-3	FDSC 4713 Food Product and Process Development with lab component (odd years)
3	University Core in Fine Arts/Humanities or Social Science or History
3	General Elective
<b>FDSC concentration:</b>	
0-4	FDSC 4124 Food Microbiology with lab component (even years)
4	FDSC 4114 Food Analysis with lab component (even years) or FDSC 4754 Engineering Principles of Food Processing with lab component (odd years)
<b>FDTN concentration:</b>	
3	AGED 3142/3141L Agri Communications and lab
0-2	FDSC 3202 Introduction to Food Law (even years)
3	Business Electives
<b>13-15</b>	<b>Semester hours</b>
<b>124</b>	<b>Total hours</b>

**Minor in Food Science (FDSC-M)**

The Food Science Minor consists of 18 semester hours to include:

- \_\_\_ FDSC 3103 Principles of Food Processing with lab component
- \_\_\_ FDSC 4124 Food Microbiology with lab component
- \_\_\_ FDSC 4304 Food Chemistry with lab component
- Choose 7 hours from:
- \_\_\_ FDSC 2503 Food Safety and Sanitation
- \_\_\_ FDSC 3202 Introduction to Food Law
- \_\_\_ FDSC 4114 Food Analysis with lab component
- \_\_\_ FDSC 4203 Quality Evaluation and Control with lab component
- \_\_\_ HESC 1213 Nutrition in Health

A student planning to minor in food science must consult a Department of Food Science adviser.

SEE PAGE 346 FOR FOOD SCIENCE (FDSC) COURSES

**HORTICULTURE (HORT)**

- David L. Hensley  
 Head of the Department  
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 479-575-2603  
<http://hort.uark.edu/>
- University Professors Clark, Morelock
  - Professors Evans, Hensley, Murphy, Robbins, Richardson, Rom (C.)
  - Associate Professors Andersen, Carson, Garcia, Karcher, Lindstrom, Srivastava
  - Assistant Professors Patton, McDonald
  - Distinguished Professor Emeritus Moore
  - University Professor Emeritus Rom (R.)
  - Professors Emeriti Bradley, Einert, Huang, Klingaman, Martin, McFerran
  - Associate Professor Emeritus King



The Department of Horticulture offers a broad, science-based degree with technical training: Horticulture, Landscape and Turf Sciences (HLTS).

Horticulture, landscape and turf management involves selection, production, management, marketing, use and research of ornamental crops (shrubs, trees, flowers, and turf), edible crops (herbs, vegetables and fruits) and turf grasses for the economic, nutritional, aesthetic and recreational well being of society. The major provides education and training in basic and applied sciences, arts and humanities, communication, and business and economics, to provide an understanding of the underlying principles in plant development and growth, development and use of new technologies, and the operation of a horticultural enterprise. In consultation with an academic adviser and mentor, students may individually focus their academic programs through required and elective courses to focus training in specialized areas such as production, greenhouse and floriculture sciences, turf management, golf course supervision, nursery production and management, crop production, pest management, sales and support services, education and training, and horticultural consulting. An internship in the industry is required to gain practical, hands-on experience.

Job opportunities for horticulturists include horticulture crop production and management, horticulture merchandising and business, consulting, inspection, research, teaching, communications, allied industries serving horticultural producers, journalism, and developing private business. Students who specialize in landscape and aspects of ornamental horticulture will be prepared for careers in the landscape management industry, landscape nurseries, landscape architectural firms, private and public gardens, and public agencies such as parks and recreation. Job opportunities for students studying turf management include golf course superintendent, sports field manager, turfgrass science companies, seed or sod production, commercial landscape turf management, research, teaching or private consulting. Advanced study may be required for some careers.

**Requirements for a Major in Horticulture, Landscape and Turf Sciences**  
(See page 40 for University Core and page 70 for B.S.A. requirements)

**Communications** (15 hours)

- \_\_ ENGL 1013 Composition I
- \_\_ ENGL 1023 Composition II
- \_\_ ENGL 2003 Advanced Composition or Exemption Communication-Intensive Elective – See page 41 for exemption information
- \_\_ COMM 1313 Fundamentals of Communication
- \_\_ Communication Intensive Elective (3 hours) See adviser

**U.S. History and Government** (3 hours)

Choose 3 hours from U.S. History University Core – See Page 40

**Mathematics** (3 hours)

- \_\_ MATH 1203 College Algebra (or higher level course)

**Physical and Biological Sciences** (17-20 hours)

- \_\_ BIOL 1543/1541L Principles of Biology and lab
- \_\_ BIOL 1613/1611L Plant Biology and lab
- \_\_ CHEM 2613/2611L Organic Physiological Chemistry and lab

Choose either:

- \_\_ CHEM 1074/1071L Fundamentals of Chemistry and lab

or

- \_\_ CHEM 1103/1101L University Chemistry I and lab and
- \_\_ CHEM 1123/1121L University Chemistry II and lab

**Fine Arts and Humanities** (6 hours)

Choose 6 hours in two categories from "State Minimum Fine Arts, Humanities Core" (categories a and b) – See Page 40.

**Social Sciences University Core Courses** (9 hours)

Choose 9 hours from at least two listed fields of study. Of these, 3 hours must be in AGEC or ECON – See Page 40

**Horticulture Core Requirements** (21-22 hours)

- \_\_ AFLS 1011 Freshman Orientation
- \_\_ CSES 2203/2201L Soil Science and lab
- \_\_ HORT 2003 Principles of Horticulture with lab component
- \_\_ HORT 3901 Horticultural Career Development
- \_\_ HORT 4403 Plant Propagation with lab component
- \_\_ HORT 462V Horticulture Internship (3 hours)

Choose 6-7 hours from:

- \_\_ CSES 2003 Introduction to Weed Science with lab component
- \_\_ ENTO 3013 Introduction to Entomology with lab component
- \_\_ PLPA 3004 Principles of Plant Pathology with lab component

**Horticulture Electives** (Choose 18 hours)

- \_\_ HORT 2303 Introduction to Turfgrass Management with lab component
- \_\_ HORT 3103 Woody Landscape Plants with lab component
- \_\_ HORT 3113 Herbaceous and Indoor Plants with lab component
- \_\_ HORT 3133 Advanced Woody Landscape Plants with lab component
- \_\_ HORT 3303 Vegetable Crops
- \_\_ HORT 3403 Turfgrass Management with lab component
- \_\_ HORT 4033 Professional Landscape Installation and Construction
- \_\_ HORT 4043 Professional Landscape Management
- \_\_ HORT 4103 Fruit Production Science with lab component
- \_\_ HORT 4503 Nursery Management with lab component
- \_\_ HORT 4603 Practical Landscape Planning
- \_\_ HORT 4703/4701L Greenhouse Management and lab
- \_\_ HORT 4803/4801L Greenhouse Crops and lab
- \_\_ HORT 4903 Golf and Sports Turf Management with lab component
- \_\_ HORT 4913 Rootzone Management for Golf and Sports Turf
- \_\_ HORT 4921 Golf Course Operations
- \_\_ HORT 400V Horticulture Special Problems
- \_\_ HORT 401V Horticulture Special Topics

**Discipline-related electives** (Choose 12 hours)

- \_\_ AGME 3102/3101L Small Power Units and Turf Equipment and lab
- \_\_ AGME 3153 Surveying in Agriculture and Forestry
- \_\_ AGME 4973 Irrigation with lab component
- \_\_ ANSC 3123 Principles of Genetics
- \_\_ LARC 3914 Planting Design I
- \_\_ LARC 2113 Design Communications
- \_\_ PHYS 1023/1021L Physics & Human Affairs and lab (or higher or WCOB (up to 9 hours) or any AGEC, BIOL, CHEM, CSES, ENSC, ENTO, HORT, PLPA class not taken in any other elective groups.

**General Electives** (16-21 hours)

**124 Total Hours**

**Horticulture, Landscape and Turf Sciences Nine-Semester Degree Plan**

Students wishing to follow the degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

**Fall Semester Year 1**

1	AFLS 1011 Freshman Orientation
3	University Core MATH 1203 College Algebra
3	University Core ENGL 1013 Composition I
3	COMM 1313 Fundamentals of Communication
4	University Core BIOL 1543/1541L Principles of Biology and lab
<b>14</b>	<b>Semester hours</b>

Spring Semester Year 1	
3	University Core ENGL 1023 Composition II
3	HORT 2003 Principles of Horticulture with lab component
3	Fine Arts/Humanities University Core
3	History Core Elective
3	Social Science Core
1	General Elective
<b>16</b>	<b>Semester hours</b>
Fall Semester Year 2	
5	CHEM 1074/1071L Fundamentals of Chemistry and lab
3	Communication Intensive Class
6	Horticulture Electives
<b>14</b>	<b>Semester hours</b>
Spring Semester Year 2	
4	University Science Core BIOL 1613/1611L Plant Biology and lab
3	Fine Arts/Humanities University Core
3	ENGL 2003 Advanced Composition or Exemption Elective
1	HORT 3901 Horticulture Career Development
3	Discipline-related Elective
3	General Elective
<b>17</b>	<b>Semester hours</b>
Fall Semester Year 3	
4	CSES 2203/2201L Soil Sciences and lab
3-4	Pest Management Elective
3	Horticulture Elective
3	Social Sciences University Core Elective
3	Discipline-related Elective
<b>16-17</b>	<b>Semester hours</b>
Spring Semester Year 3	
4	CHEM 2613/2611L Organic Chemistry and lab
3-4	Discipline-related Elective
3	HORT 4403 Plant Propagation with lab component
3	Horticulture Elective
<b>13-14</b>	<b>Semester hours</b>
Summer Semester Year 3	
3	HORT 462V Summer Internship
Fall Semester Year 4	
2-3	Discipline-related Elective
3	Horticulture Elective
3-4	Pest Management Elective
5-6	General Electives
<b>13-16</b>	<b>Semester hours</b>
Spring Semester Year 4	
3	Social Science University Core Elective
3	Horticulture Elective
8-9	General Electives
<b>14-15</b>	<b>Semester hours</b>
<b>124</b>	<b>Total Hours</b>

**Minor in Horticulture (HORT-M)**

The minor will consist of 18 hours to include the following:  
 \_\_\_ HORT 2003 Principles of Horticulture with lab component  
 \_\_\_ HORT 4403 Plant Propagation with lab component  
 Choose 9-11 hours from:  
 \_\_\_ HORT 2303 Introduction to Turfgrass Management  
 \_\_\_ HORT 3303 Vegetable Crops  
 \_\_\_ HORT 400V Special Problems (1-3 hours)  
 \_\_\_ HORT 4103 Fruit Production Science and Technology with lab component  
 \_\_\_ HORT 4503 Nursery Management with lab component

\_\_\_ HORT 4703/4701L Greenhouse Management and Controlled Environment Horticulture and lab  
 \_\_\_ HORT 4803/4801L Floriculture and lab  
 Choose 3 hours from:  
 \_\_\_ HORT 3103 Woody Landscape Plants with lab component  
 \_\_\_ HORT 3113 Herbaceous and Indoor Plant Materials with lab component  
 \_\_\_ HORT 3133 Advanced Woody Landscape Plants with lab component

**Minor in Landscape Horticulture (LHRT-M)**

The minor will consist of 18 hours to include:  
 \_\_\_ HORT 2003 Principles of Horticulture with lab component  
 \_\_\_ HORT 4043 Prof Landscape Management  
 Choose 3 hours from:  
 \_\_\_ HORT 4603 Practical Landscape Planning  
 \_\_\_ LARC Studio Course  
 Choose 3 hours from:  
 \_\_\_ HORT 3103 Woody Landscape Plants with lab component  
 \_\_\_ HORT 3113 Herbaceous and Indoor Plant Materials with lab component  
 Choose 6-8 additional hours from:  
 \_\_\_ HORT 2303 Introduction to Turfgrass Management  
 \_\_\_ HORT 3103 Woody Landscape Plants with lab component  
 \_\_\_ HORT 3113 Herbaceous and Indoor Plant Materials with lab component  
 \_\_\_ HORT 3403 Turfgrass Management with lab component  
 \_\_\_ HORT 400V Special Problems (1-3 hours)  
 \_\_\_ HORT 4033 Professional Landscape Installation and Construction  
 \_\_\_ HORT 4403 Plant Propagation with lab component  
 \_\_\_ HORT 4503 Nursery Management with lab component  
 \_\_\_ HORT 4703/4701L Greenhouse Management and Controlled Environment Horticulture and lab  
 \_\_\_ HORT 4803/4801L Floriculture and lab  
 \_\_\_ LARC 3734 Landscape Architecture Construction III

**Minor in Turf Management (TURF-M)**

The minor will consist of 19 hours to include the following:  
 \_\_\_ CSES 2203/2201L Soil Science and lab  
 Choose 6 hours from:  
 \_\_\_ HORT 2303 Introduction to Turfgrass Management  
 \_\_\_ HORT 3403 Commercial and Residential Turfgrass Management with lab component  
 \_\_\_ HORT 4903 Golf and Sports Turfgrass Management with lab component  
 Choose 6 hours from:  
 \_\_\_ ENTO 400V Special Problems (3 hours) (Turf Pest Management)  
 \_\_\_ HORT 3103 Woody Landscape Plants with lab component  
 \_\_\_ HORT 400V Special Problems (3 hours) (Turf Pest Management)  
 \_\_\_ HORT 4033 Professional Landscape Installation and Construction  
 \_\_\_ HORT 4043 Professional Landscape Management  
 Choose 3 hours from:  
 \_\_\_ AGME 4973 Irrigation with lab component  
 \_\_\_ AGME 3102/3101L Small Power Units/Turf Equipment and lab

SEE PAGE 356 FOR HORTICULTURE (HORT) COURSES

**PLANT PATHOLOGY (PLPA)**

- Rick Bennett  
Head of the Department  
217 Plant Sciences Building  
479-575-2445  
<http://www.uark.edu/depts/plntpath/PLPA/HTML/index.html>
- University Professors Robbins, TeBeest
  - Professors Cartwright (R.), Correll, Kirkpatrick, Korth, Lee, Lim, Milus, Rothrock, Rupe
  - Associate Professors Coker, Spradley
  - Assistant Professors Bluhm, Monfort, Vann, Tzanetakis,
  - Research Assistant Professor Saylor
  - Adjunct Assistant Professors Cartwright (K.), Xia
  - Adjunct Associate Professors Brooks, Chen, Jia

Plant pathology is the study of interrelationships of plants with the abiotic and biotic agents that affect plant health and productivity. The goal of the discipline is to minimize the impacts of plant diseases on agricultural production and human health. Scientific training within the department focuses on the nature, cause, and management of plant diseases.

Plant pathology is a graduate degree program. Undergraduate students interested in plant pathology should pursue a minor in pest management or plant pathology. See page 70 for degree requirements.

**Minor in Plant Pathology (PLPA-M)**

A student planning to minor in plant pathology should notify the Department of Plant Pathology and consult an adviser. A minor in Plant Pathology consists of 19 hours to include the following:

- \_\_ PLPA 3004 Principles of Plant Pathology
- \_\_ PLPA 400V Research (3 hours)  
Choose 3 hours from:
  - \_\_ PLPA 4103 Plant Disease Control
  - \_\_ PLPA 4304 Applied Plant Disease Management
- Choose 9 hours from:
  - \_\_ BIOL 4233 Genomics and Bioinformatics
  - \_\_ BIOL 4304 Plant Physiology
  - \_\_ BIOL 4353 Ecological Genetics
  - \_\_ BIOL 4424 Mycology
  - \_\_ BIOL 4753 General Virology
  - \_\_ PLPA 4333 Biotechnology in Agriculture

SEE PAGE 380 FOR PLANT PATHOLOGY (PLPA) COURSES

**PEST MANAGEMENT (PMGT)**

- Craig Rothrock  
Program Coordinator  
206 Plant Sciences Building  
479-575-2445
- All faculty in the Department of Plant Pathology, Entomology, and the discipline of Weed Science in the Department of Crop, Soil, and Environmental Sciences are faculty in the discipline of Pest Management.

**Minor in Pest Management (PMGT-M)**

Students interested in this area of study must declare their intention to the program coordinator. A minor in Pest Management consists of 19-20 hours to include the following:

- \_\_ CSES 2003 Introduction to Weed Science
- \_\_ ENTO 3013 Introduction to Entomology

- \_\_ PLPA 3004 Principles of Plant Pathology
- \_\_ PLPA 4103 Plant Disease Control  
Choose 3 hours from:
  - \_\_ CSES 4133 Weed Identification, Morphology, and Ecology
  - \_\_ CSES 4143 Principles of Weed Control
- Choose 3 hours from:
  - \_\_ ENTO 4024 Insect Diversity and Taxonomy
  - \_\_ ENTO 4123 Insect Pest Management
  - \_\_ ENTO 4133 Advanced Applied Entomology

**POULTRY SCIENCE (POSC)**

- Keith Lusby  
Interim Head of the Department  
0114 Poultry Science Center  
479-575-4952  
<http://www.poultryscience.uark.edu/>
- University Professors Chapman, Waldroup (P.W.)
  - Professors Anthony, Bottje, Coon, Erf, Goodwin, Hargis, Jones, Kuenzel, Li, Marcy, Ricke, Slavik, Wideman
  - Research Professors Donoghue (A.), Huff (G.), Huff (W.), Rath
  - Adjunct Professors Bristor, Haggard, Keck, Plue, Rhoads, Rosen, Steelman, Waldroup (A.), Zelenka
  - Associate Professors Clark, Donoghue (D.), Kwon, Owens, Watkins
  - Adjunct Associate Professors Story, Meullenet
  - Assistant Professors Bramwell, Kong
  - Adjunct Assistant Professors Blair, Breeding, Cook, Davis, Fussell, Smith
  - Adjunct Research Assistant Professor Pumford

A major in poultry science is designed to provide the scientific and technical education to prepare students for positions of leadership and responsibility in the expanding fields of production, processing, marketing, and distribution of meat, eggs, and related poultry products. The curriculum also prepares students for career opportunities in specialized areas of nutrition, breeding, genetics, physiology, management, food science, immunology, and disease.

Elective hours allow students to select a minor and thus personalize their degree. Elective hours can also be used to emphasize areas of business, production, processing or science. Pre-veterinary medicine, pre-medical, or pre-pharmacy requirements may be fulfilled while meeting degree requirements.

Curricula are designed to permit the student to obtain the necessary foundation to pursue graduate study for the master's and doctoral degrees. Advanced degrees are offered but not limited to the areas of nutrition, genetics, physiology, product technology, and poultry health.

**Requirements for a Major in Poultry Science (POSC)**

(See page 40 for University Core and page 70 for B.S.A. requirements)

- Communications** (15 hours)
- \_\_ ENGL 1013 Composition I
  - \_\_ ENGL 1023 Composition II
  - \_\_ ENGL 2003 Advanced Composition **or** ENGL 2013 Essay Writing **or** Exemption Communication Elective – See page 41 for exemption information
  - \_\_ COMM 1313 Fundamentals of Communication
  - \_\_ Communication Intensive Elective from an approved course list. See adviser
- U.S. History or Government** (3 hours)  
Choose 3 hours from U.S. History University Core – See Page 40
- Mathematics and Statistics** (6-7 hours)
- \_\_ MATH 1203 College Algebra **or** MATH 2043 Survey of Calculus

or MATH 2053 Finite Mathematics or MATH 2554 Calculus I or higher level course  
 \_\_\_ AGEC 2403 Quantitative Tools for Agribusiness or STAT 2303 Principles of Statistics or AGST 4023 Principles of Experimentation

**Physical and Biological Sciences (17-24 hours)**

\_\_\_ BIOL 1543/1541L Principles of Biology and lab  
 \_\_\_ BIOL 2013/2011L General Microbiology and lab  
 Choose either:  
 \_\_\_ CHEM 1074/1071L Fundamentals of Chemistry and lab  
 or  
 \_\_\_ CHEM 1103/1101L University Chemistry I and lab and CHEM 1123/1121L University Chemistry II and lab  
 Choose either:  
 \_\_\_ CHEM 2613/2611L Organic Physiological Chemistry and lab

or  
 \_\_\_ CHEM 3603/3601L Organic Chemistry and lab and CHEM 3613/CHEM 3611L Organic Chemistry II and lab

**Fine Arts and Humanities (6 hours)**

Choose 6 hours in two categories from “State Minimum Fine Arts, Humanities Core” (categories a and b) – See page 40

**Social Sciences (9 hours)**

\_\_\_ AGEC 1103 Principles of Agricultural Microeconomics or ECON 2013 Principles of Macroeconomics  
 Select 6 hours from other listed fields of study – See page 40

**Poultry Science Core (20 hours)**

\_\_\_ POSC 1023 Introduction to Poultry Science and Careers with lab component  
 \_\_\_ POSC 2353 Poultry Production and Management with lab component  
 \_\_\_ POSC 3223 Poultry Diseases  
 \_\_\_ POSC 3554 Avian Anatomy with lab component  
 \_\_\_ POSC 3123 Principles of Genetics or POSC 4333 Poultry Breeding or BIOL 2323 General Genetics  
 \_\_\_ POSC 4343 Poultry Nutrition  
 \_\_\_ POSC 4901 Undergraduate Seminar  
 Choose 10 hours from the following:  
 \_\_\_ AGEC 2303 Introduction to Agribusiness  
 \_\_\_ PHYS 2013/2011L College Physics I and lab  
 \_\_\_ PHYS 2033/2031L College Physics II and lab  
 \_\_\_ POSC 3032 Physiology I  
 \_\_\_ POSC 3042 Physiology II  
 \_\_\_ POSC 4213 Integrated Poultry Management Systems  
 \_\_\_ POSC 4314 Egg and Meat Technology with lab component.

**Poultry Science Upper Division Electives (Choose 6 hours)**

\_\_\_ POSC 3013 Exotic Companion Birds  
 \_\_\_ POSC 3381 Poultry Judging and Selection  
 \_\_\_ POSC 400V Special Problems  
 \_\_\_ POSC 401V Internship in Poultry Science  
 \_\_\_ POSC 4023 Advanced Topics in Food Safety Management  
 \_\_\_ POSC 4034 Statistical Process Control in the Food Industry  
 \_\_\_ POSC 4223 Risk Analysis for Biological Systems  
 \_\_\_ POSC 4434 Fundamentals of Reproductive Physiology  
 \_\_\_ POSC 4923 Brain and Behavior  
 \_\_\_ AFLS 3512 Rotations in Agricultural Laboratory Research

**Discipline-Related Electives (12 hours)**

Choose 12 hours from an approved list — See adviser

**General Electives (12-20 hours)**

8-22 hours of electives must be 3000 or 4000 level courses

**124 Total hours**

**Poultry Science Eight-Semester Degree Program**

Students wishing to follow the degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

Fall Semester Year 1	
4	University Core BIOL 1543/1541L Principles of Biology and lab
3	University Core ENGL 1013 Composition I
3	COMM 1313 Fundamentals of Communication
3	POSC 1023 Introduction to Poultry Science and Careers with lab component
3	FNAR/Humanities University Core Elective
1	AFLS 1011 Freshman Orientation
<b>17</b>	<b>Semester hours</b>
Spring Semester Year 1	
3	POSC 2353 Poultry Production and Management with lab component
3	University Core ENGL 1023 Composition II
3	University Core MATH 1203 College Algebra or higher level math
3	FNAR/Humanities University Core Elective
3	Social Science Core Elective
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 2	
3	ENGL 2003 Advanced Composition or ENGL 2013 Essay Writing or Exemption Elective
4-5	University Core CHEM 1103/1101L Chemistry I and lab or CHEM 1074/1071L Fundamentals of Chemistry and lab
3	History University Core Elective
3	Social Science Core AGEC 1103 Principles of Agricultural Microeconomics
3	Discipline-Related Elective
<b>16-17</b>	<b>Semester hours</b>
Spring Semester Year 2	
3	Communication Intensive Elective
4	CHEM 2613/2611L Organic Physiological Chemistry and lab or CHEM 1123/1121L Chemistry II and lab (if CHEM 1103/1101L taken previous fall)
4	POSC 3554 Avian Anatomy with lab component
3	Social Science Core Elective
3	Discipline-Related Elective
<b>17</b>	<b>Semester hours</b>
Fall Semester Year 3	
4	BIOL 2013/2011L General Microbiology and lab
3-4	CHEM 3603/3601L Organic Chemistry and lab (if CHEM 1103/ 1101L and CHEM 1123/1121L taken previously) or General Elective
3	POSC 4333 Poultry Breeding or POSC/ANSC 3123 Principles of Genetics
2-4	POSC Elective (from PHYS 2013/2011L, POSC 3032, AGEC 2303, POSC 4314)
<b>12-15</b>	<b>Semester hours</b>
Spring Semester Year 3	
3-4	CHEM 3613/3611L Organic Chemistry II and lab (if CHEM 3603/3601L taken previously) or General Elective
2-4	POSC Elective (from PHYS 2033/2031L College Physics II and lab, POSC 3042 Animal Physiology II; AGEC 2303 Introduction to Agribusiness, POSC 4213 Integrated Poultry Management)
3	Upper-Division POSC Elective
3	Discipline-Related Elective
3	General Elective or BIOL 2323 General Genetics
<b>14-17</b>	<b>Semester hours</b>
Fall Semester Year 4	
3	POSC 3223 Poultry Diseases
2-4	POSC Elective (from PHYS 2013/2011L, POSC 3032, AGEC 2303, POSC 4314) or General Elective
3	Upper-Division POSC Elective
3	AGEC 2403 Quantitative Tools for Agribusiness or General Elective
3	General Elective
<b>14-16</b>	<b>Semester hours</b>
Spring Semester Year 4	
3	POSC 4343 Poultry Nutrition

2-4	POSC Elective (from PHYS 2033/2031L College Physics II and lab, POSC 3042 Animal Physiology II; AGECE 2303 Introduction to Agribusiness, POSC 4213 Integrated Poultry Management) or General Elective
1	POSC 4901 Undergraduate Seminar
3	Discipline-Related Elective
<b>12-14</b>	<b>Semester hours</b>
<b>124</b>	<b>Total hours</b>

**Minor in Poultry Science (POSC-M)**

A student planning to minor in poultry science should consult a departmental adviser. The minor consists of 15 hours to include the following:

- \_\_ POSC 1023 Introduction to Poultry Science and Careers
- \_\_ POSC 2353 Poultry Production and Management
- \_\_ POSC 4314 Egg and Meat Technology
- Choose 5 hours from any POSC course.

SEE PAGE 382 FOR POULTRY SCIENCE (POSC) COURSES

**REQUIREMENTS FOR FOOD SAFETY CERTIFICATES OF PROFICIENCY**

Steve Seideman  
 Program Coordinator  
 2560 North Young Street  
 479-575-4421

Certificates of Proficiency in Hazard Analysis and Critical Control Point (HACCP) and Food Safety Manager (FMGR) recognize students who take a concentrated core of web-based courses focused on the application of scientific-ly-based food safety systems through the application of HACCP systems.

Students who earn the HACCP certificate will have a working knowledge of fundamental food microbiology, food sanitation, applicable law, statistical process control, and advanced HACCP applications in food processing industries. Prerequisites for acceptance: applicants to the HACCP Coordinator Certificate of Proficiency Program must have completed a B.S. degree or have at least seven years relevant experience in the food industry.

**HACCP Certificate Requirements:**

- 15 hours of Web-based courses:
  - \_\_ FDSC 2503 Food Safety and Sanitation
  - \_\_ FDSC 3202 Introduction to Food Law
  - \_\_ HLSC 4623 Human Diseases
  - \_\_ POSC 2003 Fundamentals of Food Microbiology
  - \_\_ POSC 4034 Statistical Process Control in the Food Industry

Students who earn the Food Safety Manager (FMGR) Certificate of Proficiency will have a working knowledge of advanced food microbiology, food process engineering, human diseases, and quality management as applied in food processing industries. Applicants to the Food Safety Manager Certificate of Proficiency must have completed the HACCP certificate program of study.

**FMGR Certificate requirements:**

- 15 hours of Web-based courses:
  - \_\_ FDSC 3753 Introduction to Food Engineering Principles
  - \_\_ FDSC 4823 Principles of Food Microbiology
  - \_\_ HLSC 4613 Principles of Epidemiology
  - \_\_ INEG 4323 Quality Engineering and Management
  - \_\_ POSC 4023 Advanced Topics in Food Safety Management

**SCHOOL OF HUMAN ENVIRONMENTAL SCIENCES (HESC)**

Mary M. Warnock  
 Director  
 118 Home Economics Building  
 479-575-4305  
<http://www.uark.edu/depts/hesweb/>

- Professors Farmer, Martin, Turner, Warnock, Whan
- Associate Professors Apple, Bailey, Fitch-Hilgenberg, Foote, Gentry, Harrington, Killian, Miller, Robertson, Southward, Webb
- Assistant Professors Moore, Ogbeide, Sattar, Smith, Takigiku, Wallack, Way
- Instructors Baldwin, Crandall, Harding, Powell

The School of Human Environmental Sciences at the University of Arkansas prepares students for a wide variety of professional careers in education, industry, business, government, and community services. The school is concerned with improving the quality of life for individuals and families as they exist and function in society. Human environmental sciences draw knowledge from research, from the physical, biological, and social sciences, and from arts and humanities. It relates this knowledge to an understanding of individuals' and families' needs and goals for food, clothing, shelter, management of resources, and human development and relationships. The School of Human Environmental Sciences has made a substantial contribution to the development of individuals and families through undergraduate and graduate preparation of human environmental scientists and through research in human nutrition, foods, human development, family sciences, interior design, apparel and textiles.

The four majors of the B.S.H.E.S. degree have been accredited by the Council for Professional Development of the American Association of Family and Consumer Sciences.

- See page 68 for list of majors, concentrations, minors.
- See page 70 for college academic requirements and graduation requirements.

**APPAREL STUDIES (APST)**

Lona J. Robertson  
 Area Coordinator  
 209 Home Economics Building  
 479-575-4579

The Apparel Studies program opens the door to careers in the fashion industry. Buyer, product development specialist, fashion coordinator, sales consultant, visual display artist, and quality assurance technician are only a few of the possibilities. Classes in business, retailing, apparel production, science, social science, and the liberal arts give students a basic knowledge about the textile and apparel industries. By selecting from a variety of minors, students can tailor this program to meet their goals. Program strengths include guest speakers who provide insight into today's careers, tours of major fashion centers, and internships, which provide valuable career experience.

**Requirements for a Major in Apparel Studies** (See page 40 for University Core and page 70 for B.S.H.E.S. requirements)

- Communications** (12 hours)
  - \_\_ ENGL 1013 Composition I
  - \_\_ ENGL 1023 Composition II
  - \_\_ ENGL 2003 Advanced Composition or Exemption Elective of

a COMM, JOUR, ENGL, or foreign language – See page 41 for exemption information

\_\_ COMM 1313 Fundamentals of Communication

**U.S. History or Government** (3 hours)

Choose 3 hours from U.S. History University Core – See page 40

**Mathematics** (6 hours)

\_\_ MATH 1203 College Algebra

\_\_ MATH 2053 Finite Mathematics or higher level course

**Physical and Biological Sciences** (9 hours)

\_\_ BIOL 1543/1541L Principles of Biology and lab

\_\_ CHEM 1074/1071L Fundamentals of Chemistry and lab (Students may substitute two courses in general chemistry, if desired)

**Fine Arts/Humanities** (6 hours)

\_\_ 3 hours selected from "State Minimum Arts Core" (category a) – See page 40

\_\_ 3 hours selected from "State Minimum Humanities Core" (category b) – See page 40

**Social Sciences** (9 hours)

\_\_ ECON 2143 Basic Economics

\_\_ PSYC 2003 General Psychology

\_\_ ANTH 1023 Intro to Cultural Anthropology or

SOCI 2013 General Sociology

**Foreign Language** (6 hours)

Must be consecutive courses in the same language

**APST Major Requirements:**

Human Environmental Sciences (55 hours)

\_\_ HESC 1501 Orientation

\_\_ HESC 1013 Introduction to Clothing Concepts

\_\_ HESC 1023 Introduction to Apparel Production

\_\_ HESC 1053 Computer-Based Methods-Apparel

\_\_ HESC 2013 Quality Assessment of Apparel

\_\_ HESC 2023 Visual Merchandising

\_\_ HESC 2053 Intro to Textile Science with lab component

\_\_ HESC 3003 Apparel Production

\_\_ HESC 3013 Introductory Fashion Merchandising

\_\_ HESC 3033 Fashion Merchandising Methods

\_\_ HESC 4023 Advanced Apparel Merchandising

\_\_ HESC 4033 Advanced Textile Study

\_\_ HESC 4043 History of Apparel

\_\_ HESC 4053 Contemporary Apparel

\_\_ HESC 4063 Advanced Apparel Production

\_\_ HESC 4071 Apparel Studies Pre-Internship

\_\_ HESC 4082 Apparel Studies Internship

\_\_ HESC 4901 Apparel Studies Pre-Study Tour

\_\_ HESC 4912 Apparel Studies Study Tour

\_\_ HESC 1213 Nutrition

\_\_ HESC 2413 Family Relations

Marketing (3 hours)

\_\_ MKTG 3433 Introduction to Marketing Strategy

Computers (6 hours)

\_\_ Computer Course (3 hours)

\_\_ AGED 4243 Graphic Design in AFLS

**General Electives** (9 hours)

**124 Total Hours**

**Apparel Studies Ten-Semester Degree Program**

Students wishing to follow the degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. A description of HESC courses is listed on page 351.

Fall Semester Year 1	
3	University Core ENGL 1013 Composition
3	University Core MATH 1203 College Algebra
3	University Core ARTS Category a
3	HESC 1013 Intro to Clothing Concepts
1	HESC 1501 Orientation to HESC
3	HESC 1053 Computer Based Methods for Apparel
<b>16</b>	<b>Semester hours</b>
Spring Semester Year 1	
3	University Core ENGL 1023 Composition II
3	MATH 2053 Finite Math or higher level math
3	HESC 1023 Introduction to Apparel Production
3	HESC 2413 Family Relations
3	HESC 2053 Introduction to Textile Science with lab component
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 2	
5	CHEM 1074/1071L Fundamentals of Chemistry and lab
3	University Core PSYC 2003 General Psychology
3	History University Core Elective
3	HESC 2023 Visual Merchandising and Fashion Promotion
<b>14</b>	<b>Semester hours</b>
Spring Semester Year 2	
3	HESC 2013 Quality Assessment of Apparel
3	HESC 1213 Nutrition in Health
3	Computer Course AGME 2903 Application of Microcomputers or other
3	University Core ECON 2143 Basic Economics
3	University Core Elective ANTH 1023 Intro to Cultural Anthropology or
	SOCI 2013 General Sociology
1	HESC 4901 Apparel Studies Pre-Study Tour
<b>16</b>	<b>Semester hours</b>
Summer Semester Year 2	
2	HESC 4912 Apparel Studies Study Tour
Fall Semester Year 3	
3	COMM 1313 Fundamentals of Communication
3	HESC 3013 Introduction to Fashion Merchandising
4	University Core BIOL 1543/1541L Principles of Biology and lab
3	MKTG 3433 Introduction to Marketing Strategy
3	Foreign Language Elective
<b>16</b>	<b>Semester hours</b>
Spring Semester Year 3	
3	ENGL 2003 Advanced Composition or Exemption Elective
3	HESC 3033 Fashion Merchandising Methods
3	Foreign Language Elective
3	Humanities University Core Elective
3	HESC 3003 Apparel Production
1	HESC 4071 Apparel Studies Pre-Internship
<b>16</b>	<b>Semester hours</b>
Summer Semester Year 3	
2	HESC 4082 Apparel Studies Internship
Fall Semester Year 4	
3	HESC 4023 Advanced Apparel Merchandising
3	HESC 4043 History of Apparel
3	HESC 4063 Advanced Apparel Production
6	General Electives
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 4	
3	HESC 4053 Contemporary Apparel
3	AGED 4243 Graphic Design in AFLS
3	HESC 4033 Advanced Textile Study
3	General Elective
<b>12</b>	<b>Semester hours</b>
<b>124</b>	<b>Total hours</b>

## FOOD, HUMAN NUTRITION, AND HOSPITALITY (FHNH)

Marjorie E. Fitch-Hilgenberg  
Area Coordinator (Dietetics, General Food and Nutrition)  
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The curriculum in Food, Human Nutrition, and Hospitality allows students to prepare for a career in a specialized area of foods and nutrition by completing a common set of basic courses and one of the concentrations:

A: Dietetics (DIET)

B: General Foods and Nutrition (GFNU), and

C: Hospitality and Restaurant Management (HRMN).

Interest and aptitude for the biological and physical sciences that support nutrition science are needed to successfully complete concentrations in Dietetics and General Foods and Nutrition. Hospitality and Restaurant Management is the best choice for those students who have an interest in management and who enjoy working with people.

### Dietetics (DIET)

Dietetics is for the student who intends to become a registered dietitian (RD). Courses required include those necessary as prerequisites to a dietetic internship. An internship is required for eligibility to take the national registration examination and be eligible for licensure. Students who complete the program with a minimum grade-point average of 3.0 may apply for an internship. Upon licensure, students practice as registered dietitians in the health care field or as consulting dietitians in private practice, sports nutrition, or in wellness and health maintenance centers. Students with lower GPAs may apply for supervised practice programs leading to the dietetic technician registered (DTR) certification.

### Dietetics Concentration Requirements

#### English/Communications (12-15 hours)

- \_\_ ENGL 1013 Composition I
- \_\_ ENGL 1023 Composition II
- \_\_ ENGL 2003 Advanced Composition or Exemption Elective – See page 41 for exemption information
- \_\_ ENGL 3053 Technical and Report Writing **or**
- JOUR 3123 Feature Writing **or**
- AGED 3142/3141L Agri Communications and lab
- \_\_ COMM 1313 Fundamentals of Communication

#### U.S. History or Government (3 hours)

Choose 3 hours from U.S. History University Core – See page 40

#### Mathematics University Core Course (3 hours)

- \_\_ MATH 1203 College Algebra **or** MATH 1213 Plane Trigonometry

#### Physical and Biological Sciences (24-27 hours)

Choose either:

- \_\_ CHEM 1074/1071L Fundamentals of Chemistry and lab

**or**

- \_\_ CHEM 1103/1101L University Chemistry I and lab **and**
- \_\_ CHEM 1123/1121L University Chemistry II and lab

Choose either:

- \_\_ BIOL 2213/2211L Human Physiology and lab
- \_\_ BIOL 2443/2441L Human Anatomy and lab

**or**

- \_\_ BIOL 1543/1541L Principles of Biology and lab
- \_\_ ANSC 3032 Animal Physiology I
- \_\_ ANSC 3042 Animal Physiology II

And take:

- \_\_ CHEM 2613/2611L Organic Physiological Chemistry and lab
- \_\_ CHEM 3813 Introduction to Biochemistry
- \_\_ BIOL 2013/2011L General Microbiology and lab

#### Physical Education (2 hours)

#### Fine Arts/Humanities University Core Courses (6 hours)

Choose 6 hours from “State Minimum Arts/Humanities Core” – See page 40

#### Social Sciences (9 hours)

- \_\_ PSYC 2003 General Psychology
- \_\_ HESC 2413 Family Relations
- \_\_ Social Science University Core Elective (3 hours)

#### DIET Major Requirements:

Human Environmental Sciences (50 hours)

- \_\_ HESC 1201 Introduction to Dietetics and Nutrition
- \_\_ HESC 1501 Orientation to HESC
- \_\_ HESC 1213 Nutrition in Health
- \_\_ HESC 2112/2111L Foods I and lab
- \_\_ HESC 3203 Nutrition for Health Professionals and Educators
- \_\_ HESC 3213 Dietetic and Nutrition Practice: Tools and Applications
- \_\_ HESC 2603 Food Service Purchasing
- \_\_ HESC 3604 Food Preparation for the Hospitality Industry
- \_\_ HESC 3653 Food Systems Management
- \_\_ HESC 4103 Experimental Foods
- \_\_ HESC 4213 Advanced Nutrition
- \_\_ HESC 4223 Nutrition During the Life Cycle
- \_\_ HESC 4243 Community Nutrition
- \_\_ HESC 425V Food and Nutrition Seminar (1 hour)
- \_\_ HESC 4264 Medical Nutrition Therapy I with lab component
- \_\_ HESC 4273 Medical Nutrition Therapy II
- \_\_ HESC 4623 Selection and Layout of Food Service Equipment
- \_\_ AGST 4023 Principles of Experimentation or Equivalent Elective

#### General Electives (9-15 hours)

Recommend:

- \_\_ ARTS 1313 Two-Dimensional Design
- \_\_ HESC 2203 Nutrition for Exercise & Sport
- \_\_ KINS 3153 Exercise Physiology
- \_\_ PHIL 2103 Introduction to Ethics

### 124 Total Hours

### Food, Human Nutrition and Hospitality Eight-Semester Degree Program

Students wishing to follow the degree plan in Food, Human Nutrition and Hospitality should see page 42 in the Academic Regulations chapter for university requirements of the program. The Food, Human Nutrition and Hospitality major has three concentrations: Dietetics; General Foods and Nutrition; and Hospitality and Restaurant Management.

### Dietetics Concentration

#### Fall Semester Year 1

4	CHEM 1103/1101L University Chemistry I and lab
3	MATH 1203 College Algebra or higher level math
1	HESC 1501 Orientation to HESC

1	HESC 1201 Introduction to Dietetics & Nutrition
3	HESC 1213 Nutrition in Health
3	ENGL 1013 Composition I
1	PEAC or DEAC Elective
<b>16</b>	<b>Semester hours</b>
<b>Spring Semester Year 1</b>	
4	CHEM 1123/1121L University Chemistry II and lab
3	ENGL 1023 Composition II
4	BIOL 1543/1541L Principles of Biology and lab
3	Elective – Rec: HESC 2203 Nutrition for Exercise and Sport or Elective
3	Fine Arts & Humanities University Core
<b>17</b>	<b>Semester hours</b>
<b>Fall Semester Year 2</b>	
3	HESC 2112/211L Foods I and lab
2	ANSC 3032 Animal Physiology I
3	PSYC 2003 General Psychology
3	ENGL 2003 Advanced Composition or Elective
3	COMM 1313 Fundamentals of Communication
1	PEAC or DEAC
<b>15</b>	<b>Semester hours</b>
<b>Spring Semester Year 2</b>	
4	CHEM 2613/ 2611L Organic Physiological Chemistry and lab
3	HESC 2413 Family Relations
2	ANSC 3042 Animal Physiology II
3	HESC 3203 Nutrition for the Health Professional & Educator
3	Fine Arts & Humanities University Core
<b>15</b>	<b>Semester hours</b>
<b>Fall Semester Year 3</b>	
3	CHEM 3813 Introduction to Biochemistry
3	HESC 2603 Food Service Purchasing
3	HESC 3213 Dietetic & Nutrition Practice
3	HESC 3653 Food Systems Management
3	General Elective
<b>15</b>	<b>Semester hours</b>
<b>Spring Semester Year 3</b>	
4	BIOL 2013/2011L Microbiology and lab
3	Communications Intensive Elective: ENGL 3053 Technical and Report Writing, JOUR 3123 Feature Writing or AGED 3142/3141L Agri Communications and lab
3	AGST 4023 Principles of Experimentation or Equivalent Elective
3	HESC 4103 Experimental Foods with lab component
3	U.S. History University Core Elective
<b>16</b>	<b>Semester hours</b>
<b>Fall Semester Year 4</b>	
4	HESC 3604 Food Preparation for the Hospitality Industry with lab component
3	HESC 4213 Advanced Nutrition
4	HESC 4264 Medical Nutrition Therapy I with lab component
3	HESC 4223 Nutrition During the Life Cycle
3	Social Science Core Elective
<b>17</b>	<b>Semester hours</b>
<b>Spring Semester Year 4</b>	
3	HESC 4273 Medical Nutrition Therapy II
3	HESC 4623 Selection & Layout of Food Service Equipment
1	HESC 425V Food and Nutrition Seminar
3	HESC 4243 Community Nutrition
3	General Elective
<b>13</b>	<b>Semester hours</b>
<b>124</b>	<b>Total Hours</b>

**General Foods and Nutrition (GFNU)**

Students taking this concentration are encouraged to select an approved minor from the Bumpers, Walton, or Fulbright colleges or plan other combinations of courses to prepare for non-traditional vocations including work in

community or government sponsored programs, wellness and health maintenance centers, public relations in the food industry, TV/media outlets for food and nutrition information, and international food or nutritional programs.

**General Foods & Nutrition Concentration Requirements:**

**English/Communications** (12-15 hours)

- \_\_ ENGL 1013 Composition I
- \_\_ ENGL 1023 Composition II
- \_\_ ENGL 2003 Advanced Composition or Exemption Elective – See page 41 for exemption information
- \_\_ ENGL 3053 Technical and Report Writing **or**
- JOUR 3123 Feature Writing **or**
- AGED 3142/3141L Agri Communications and lab
- \_\_ COMM 1313 Fundamentals of Communication

**U.S. History University Core Course** (3 hours)

Choose 3 hours from U.S. History University Core – See page 40

**Mathematics University Core Course** (3 hours)

- \_\_ MATH 1203 College Algebra or higher level math

**Science University Core Courses and Departmental Requirements** (24-27 hours)

Choose either:

- \_\_ CHEM 1074/1071 Fundamentals of Chemistry and lab
- or**
- \_\_ CHEM 1103/1101L University Chemistry I and lab
- \_\_ CHEM 1123/1121L University Chemistry II and lab

Choose either:

- \_\_ BIOL 2213/2211L Human Physiology and lab
- \_\_ BIOL 2443/2441L Human Anatomy and lab
- or**
- \_\_ BIOL 1543/1541L Principles of Biology and lab
- \_\_ ANSC 3032 Animal Physiology I
- \_\_ ANSC 3042 Animal Physiology II

And take:

- \_\_ CHEM 2613/2611L Organic Physiological Chemistry and lab
- \_\_ CHEM 3813 Introduction to Biochemistry
- \_\_ BIOL 2013/2011L General Microbiology and lab

**Physical Education** (2 hours)

**Fine Arts/Humanities University Core Courses** (6 hours)

Choose 6 hour in two categories from “State Minimum Arts/ Humanities Core” (categories a and b) – See page 40

**Social Sciences University Core Courses** (9 hours)

- \_\_ PSYC 2003 General Psychology
- \_\_ HESC 2413 Family Relations
- \_\_ Choose 3 hours from Social Sciences University Core – See page 40

**GFNU Major Requirements** (40-42 hours)

- \_\_ HESC 1201 Introduction to Dietetics and Nutrition **or**
- HESC 1603 Introduction to Hospitality Management
- \_\_ HESC 1213 Nutrition in Health
- \_\_ HESC 1501 Orientation to HESC
- \_\_ HESC 2112/2111L Foods I and lab
- \_\_ HESC 2203 Nutrition for Exercise and Sport
- \_\_ HESC 2603 Food Service Purchasing
- \_\_ HESC 3203 Nutrition for Health Professionals and Educators
- \_\_ HESC 3213 Dietetic and Nutrition Practices: Tools and Applications
- \_\_ HESC 3604 Food Preparation for the Hospitality Industry
- \_\_ HESC 3653 Food Systems Management
- \_\_ HESC 4103 Experimental Foods
- \_\_ HESC 4213 Advanced Nutrition
- \_\_ HESC 4223 Nutrition During the Life Cycle
- \_\_ HESC 4243 Community Nutrition



\_\_ HESC 425V Food and Nutrition Seminar (1 hour)

**General Electives** (17-25 hours)

Recommended:

\_\_ EXED 3023 Introduction to the Cooperative Extension Service

**124 Total Hours**

**General Foods and Nutrition Concentration**

Fall Semester Year 1	
4	Science Core CHEM 1103/1101L Chemistry I and lab
3	Math Core MATH 1203 College Algebra OR higher level math
1	HESC 1501 Orientation to HESC
3	HESC 1213 Nutrition in Health
3	English Core ENGL 1013 Composition I
1	PEAC OR DEAC
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 1	
4	Science Core CHEM 1123/1121L Chemistry II and lab
3	English Core ENGL 1023 Composition II
4	Science Core BIOL 1543/1541L Principles of Biology and lab
3	COMM 1313 Fundamentals of Communication
1	PEAC OR DEAC
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 2	
2-4	ANSC 3032 Animal Physiology I OR BIOL 2213/2211L Human Physiology and lab OR BIOL 2443/2441L Human Anatomy and lab
3	HESC 2112/2111L Foods I and lab
3	Social Science Core HESC 2413 Family Relations
1-3	HESC 1201 Introduction to Dietetics and Nutrition OR HESC 1603 Introduction to Hospitality Management
3	Fine Arts/Humanities Core Elective
3	General Elective
<b>15-19</b>	<b>Semester hours</b>
Spring Semester Year 2	
4	CHEM 2613/2611L Organic Physiological Chemistry and lab
2-4	ANSC 3042 Animal Physiology II OR BIOL 2213/2211L Human Physiology and lab OR BIOL 2443/2441L Human Anatomy and lab
3	HESC 2203 Nutrition for Exercise/Sport
3	Social Science Core PSYC 2003 General Psychology
3	History Core Elective
3	ENGL 2003 Advanced Composition OR Exemption elective
<b>18-20</b>	<b>Semester hours</b>
Fall Semester Year 3	
3	CHEM 3813 Introduction to Biochemistry
3	HESC 3213 Dietetic and Nutrition Practice
3	HESC 3653 Food Systems Management
3	Fine Arts/Humanities Core Elective
3	HESC 2603 Food Service Purchasing
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 3	
3	HESC 3203 Nutrition for Health Professionals & Educators
3	HESC 4103 Experimental Foods with lab component
3	HESC 4243 Community Nutrition
3	ENGL 3053 Technical and Report Writing OR JOUR 3123 Feature Writing OR AGED 3142/3141L Ag Communication and lab
3	Social Science Core Elective
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 4	
3	HESC 4213 Advanced Nutrition
3	HESC 4223 Nutrition During Life Cycle
4	HESC 3604 Food Preparation for the Hospitality Industry with lab component
4	BIOL 2013/2011L Microbiology and lab

3	General Elective
<b>17</b>	<b>Semester hours</b>
Spring Semester Year 4	
1	HESC 425V Food and Nutrition Seminar
7-13	General Electives
<b>8-14</b>	<b>Semester hours</b>
<b>124</b>	<b>Total Hours</b>

**Hospitality and Restaurant Management (HRMN)**

Students in the hospitality and restaurant management concentration prepare themselves for managerial positions in the restaurant and hospitality industry. This dynamic curriculum provides students with skills in foods and business, as well as hospitality and restaurant management. Students have the opportunity to manage and operate a restaurant on campus. Students obtain hands-on experience by completing 1,000 hours of satisfactory, verifiable work experience in the hospitality and restaurant industry, usually completed during the summer and on part-time jobs during the school year. This work experience must be completed prior to graduation. A management internship, which allows students to acquire practical management experience and specialized knowledge from supervised work in a hotel, restaurant, or other hospitality-related business, is also part of this degree. Students in this program can complete a minor in business.

**Hospitality and Restaurant Management Concentration Requirements:**

**English/Communications** (12-15 hours)

- \_\_ ENGL 1013 Composition I
- \_\_ ENGL 1023 Composition II
- \_\_ ENGL 2003 Advanced Comp or Exemption Elective – See page 41 for exemption information
- \_\_ AGED 3142/3141L Agri Communications and lab
- \_\_ COMM 1313 Fundamentals of Communication

**U.S. History University Core Course** (3 hours)

Choose 3 hours from U.S. History University Core – See page 40

**Mathematics University Core Course and Computers** (3 hours)

- \_\_ Mathematics 1203 College Algebra or higher level math
- \_\_ WCOB 1120 Computer Competency Requirement or Equivalent

**Physical and Biological Sciences** (8-9 hours)

- \_\_ CHEM 1103/1101L University Chemistry I and lab
- \_\_ CHEM 1123/1121L University Chemistry II and lab or BIOL 1543/1541L Principles of Biology and lab
- \_\_ CHEM 1074/1071L Fundamentals of Chemistry and lab

**Physical Education** (2 hours)

**Fine Arts/Humanities University Core Courses** (6 hours)

Choose 6 hours from two categories from “State Minimum Arts/ Humanities Core” (categories a and b – See page 40.)

**Social Sciences University Core Courses** (9 hours)

- \_\_ ECON 2143 Basic Economics
- \_\_ HESC 2413 Family Relations
- \_\_ PSYC 2003 General Psychology

**HRMN Major Requirements** (17 hours)

Human Environmental Sciences Core

- \_\_ HESC 1501 Orientation to HESC
- \_\_ HESC 1213 Nutrition in Health
- \_\_ HESC 2112/2111L Foods I and lab
- \_\_ HESC 3604 Food Preparation for the Hospitality Industry
- \_\_ HESC 3653 Food Systems Management
- \_\_ HESC 4103 Experimental Foods

**Additional Requirements** (49-55 hours)

- \_\_ HESC 1601 Work Experience Practicum (1-4 hours)

- \_\_ HESC 1603 Introduction to Hospitality Management
- \_\_ HESC 2123 Catering Management with lab component
- \_\_ HESC 2603 Food Service Purchasing
- \_\_ HESC 2633 Hotel Operations Management
- \_\_ HESC 2643 Principles of Tourism
- \_\_ HESC 3613 Resort Management
- \_\_ HESC 3623 Legal Issues in Hospitality Industry with lab component
- \_\_ HESC 3633 Front Office Management
- \_\_ HESC 4623 Selection and Layout of Food Service Equipment
- \_\_ HESC 4633 Advanced Hospitality Operations
- \_\_ HESC 4643 Meetings, Events and Convention Management
- \_\_ HESC 4653 Global Travel and Tourism Management
- \_\_ HESC 4693 Hospitality Management Internship (3-6 hours)
- \_\_ AGEC 2143 Ag Financial Records or Equivalent
- \_\_ AGEC 3303 Food and Aricultural Marketing or Equivalent
- \_\_ FDSC 2503 Food Safety and Sanitation
- \_\_ **General Electives** (5-15 hours)  
 Recommended:  
 \_\_ Foreign language – 6 hours in the same language  
 \_\_ HLSC 3633 First Responder-First Aid

**124 Total Hours**

**Hospitality and Restaurant Management Concentration**

Fall Semester Year 1	
3	English Core ENGL 1013 Composition
3	Math Core MATH 1203 College Algebra or higher level math
3	HESC 1213 Nutrition in Health
5	Science Core *CHEM 1074/1071L Fundamentals of Chemistry and lab
3	HESC 1603 Intro Hospitality Management
<b>17</b>	<b>Semester hours</b>
Spring Semester Year 1	
3	English Core ENGL 1023 Composition II
4	Science Core *BIOL 1543/1541L Principles of Biology and lab
3	Fine Arts/Humanities Core Elective
3	COMM 1313 Fundamentals of Communication
1	PEAC OR DEAC Elective
1	HESC 1601 Work Experience Practicum **
1	HESC 1501 Orientation to HESC
<b>16</b>	<b>Semester hours</b>
Fall Semester Year 2	
3	HESC 2112/2111L Foods I and lab
1	PEAC Elective
0	WCOB 1120 Computer Competency Requirement
3	Social Sciences Core PSYC 2003 General Psychology
3	FDSC 2503 Food Safety and Sanitation
3	HESC 2633 Hotel Operations Management
3	HESC 2643 Principles of Tourism
<b>16</b>	<b>Semester hours</b>
Spring Semester Year 2	
3	HESC 3623 Legal Issues in the Hospitality Industry
3	HESC 2123 Catering Management with lab component
3	History Core Elective
3	ENGL 2003 Advanced Composition OR Exemption Elective
3	General Elective
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 3	
3	HESC 2603 Food Service Purchasing
3	HESC 3653 Food Systems Management

3	AGEC 2143 Ag Financial Records or equivalent
3	AGED 3142/3141L Agriculture Communications and lab
3	Social Sciences Core ECON 2143 Basic Economics – Theory & Practice
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 3	
4	HESC 3604 Food Preparation for the Hospitality Industry with lab component
3	HESC 3633 Front Office Management
1	HESC 1601 Work Experience Practicum **
3	HESC 3613 Resort Management
3	General Elective
<b>14</b>	<b>Semester hours</b>
Fall Semester Year 4	
3	HESC 4643 Meeting, Events and Convention Management
3	AGEC 3303 Food & Ag Marketing
3	HESC 4653 Global Travel & Tourism Management
3	Social Science Core HESC 2413 Family Relations
3	Fine Arts/Humanities Core Elective
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 4	
3	HESC 4103 Experimental Foods with lab component
3	HESC 4623 Select & Layout of Food Service Equipment
3	HESC 4633 Advanced Hospitality Operations
1	HESC 1601 Work Experience Practicum **
3	General Elective
<b>13</b>	<b>Semester hours</b>
Summer Semester Year 4	
3	HESC 4693 Hospitality Management Internship
<b>3</b>	<b>Semester hours</b>
<b>124</b>	<b>Total Hours</b>

\* May take CHEM 1103/1101L AND CHEM 1123/1121L  
 \*\* HESC 1601 must be repeated until 1000 hours of work experience are completed.

**Minor in General Foods and Nutrition (GFNU-M)**

- 18 hours to include the following:  
 \_\_ HESC 1213 Nutrition in Health  
 \_\_ HESC 2112/2111L Foods I and lab  
 \_\_ HESC 3203 Nutrition for Health Professionals and Educators  
 \_\_ HESC 4213 Advanced Nutrition  
 Choose 6 hours from:  
 \_\_ HESC 2203 Nutrition for Exercise and Sport  
 \_\_ HESC 4223 Nutrition During the Life Cycle  
 \_\_ HESC 4243 Community Nutrition  
 \_\_ HESC 425V Food and Nutrition Seminar (may be taken 1 to 2 times for a total of 2 credits)

**GENERAL HUMAN ENVIRONMENTAL SCIENCES (GHES)**

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 Director  
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 479-575-4305

The general human environmental sciences curriculum serves students seeking a background in all of the subject-matter areas of human environmental sciences. The general curriculum prepares students for careers in social services, business, and the Cooperative Extension Service. Liberal elective hours allow students to select courses and programs to meet individual needs.

Students may be certified by the Arkansas State Board of Education to teach family and consumer sciences in Arkansas public schools by combining the pre-professional education courses as electives and completing the Master of Arts in teaching (M.A.T.) degree requirements. (See M.A.T., page 240). At the beginning of the sophomore year, students should consult with their advisers to schedule the general education and pre-professional education courses.

### Requirements for a Major in General Human Environmental Sciences

(See page 40 for University Core and page 70 for B.S.H.E.S. requirements)

#### English/Communications (12 hours)

- \_\_ ENGL 1023 Composition II
- \_\_ ENGL 2003 Advanced Composition or Exemption Elective – See page 41 for exemption information
- \_\_ COMM 1313 Fundamentals of Communication

#### U.S. History University Core Course (3 hours)

Choose 3 hours from U.S. History University Core – See page 40

#### Mathematics University Core Course and Computers (6 hours)

- \_\_ MATH 1203 College Algebra or higher level math
- \_\_ Computer Course (3 hours)

#### Biological and Physical Sciences (13 hours)

- \_\_ BIOL 1543/1541L Principles of Biology and lab
- \_\_ CHEM 1074/1071L Fundamentals of Chemistry and lab
- \_\_ CHEM 2613/2611L Organic Chemistry and lab

#### Fine Arts/Humanities University Core Courses (6 hours)

Choose 3 hours from category a and 3 hours from category b in “State Minimum Fine Arts/Humanities Core” – See page 40

#### Social Sciences University Core Courses (9 hours)

- \_\_ PSYC 2003 General Psychology
- Choose 6 hours from State Minimum Social Sciences Core from other listed fields of study – See page 40

#### Health Science (3 hours)

- \_\_ HLSC 1002 Wellness Concepts
- \_\_ PEAC 1621 Fitness Concepts

#### GHEM Major Requirements (43 hours)

- \_\_ HESC 1013 Introduction to Clothing Concepts
- \_\_ HESC 1023 Introduction to Apparel Production
- \_\_ HESC 1213 Nutrition in Health or HESC 3203 Nutrition for Health Professionals and Educators
- \_\_ HESC 1403 Life Span Development
- \_\_ HESC 1501 Orientation to HESC
- \_\_ HESC 2053 Introduction to Textile Science with lab component
- \_\_ HESC 2112/2111L Foods I and lab
- \_\_ HESC 2123 Catering Management
- \_\_ HESC 2413 Family Relations
- \_\_ HESC 2433 Child Development
- \_\_ HESC 3402/3401L Child Guidance and lab
- \_\_ HESC 3763L Family Resource Management Lab
- \_\_ HESC 4453 Parenting and Family Dynamics
- \_\_ HESC 4753 Family Financial Management
- \_\_ HESC 4813 Human Factors in ID

#### General Electives (29 hours)

### 124 Total Hours

### General Human Environmental Sciences Eight-Semester Degree Program

Students wishing to follow the degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

#### Fall Semester Year 1

3	HESC 1403 Lifespan Development
1	HESC 1501 Orientation to HESC
3	ENGL 1013 Composition I
3	MATH 1203 College Algebra or higher level math
3	Fine Arts Core Elective (Category a of University Core)
<b>16</b>	<b>Semester hours</b>

#### Spring Semester Year 1

3	HESC 1013 Introduction to Clothing Concepts
3	HESC 2413 Family Relations
3	PSYC 2003 General Psychology
3	ENGL 1023 Composition II
2	General Elective
1	PEAC 1621 Fitness Concepts
<b>15</b>	<b>Semester hours</b>

#### Fall Semester Year 2

3	HESC 1023 Introduction to Apparel Production
3	HESC 2433 Child Development
3	COMM 1313 Fundamentals of Communications
2	HLSC 1002 Wellness Concepts
5	CHEM 1074/1071L Fundamentals of Chemistry and lab
<b>16</b>	<b>Semester hours</b>

#### Spring Semester Year 2

3	HESC 3402/3401L Child Guidance and lab
3	HESC 2053 Introduction to Textile Science with lab component
3	Social Science Core Elective
3	Humanities Core Elective (category b – See page 40)
3	General Elective
<b>15</b>	<b>Semester hours</b>

#### Fall Semester Year 3

3	HESC 3763L Family Resource Management Lab
3	HESC 2112/1211L Foods I and lab
3	ENGL 2003 Advanced Composition or exemption elective
4	BIOL 1543/1541L Principles of Biology and lab
3	Social Science Core SOCI 2013 General Sociology
<b>16</b>	<b>Semester hours</b>

#### Spring Semester Year 3

3	HESC 2123 Catering Management
3	HESC 1213 Nutrition in Health or HESC 3203 Nutrition for Health Professionals and Educators
4	CHEM 2613/2611L Organic Physiological Chemistry and lab
6	General Electives – upper division
<b>16</b>	<b>Semester hours</b>

#### Fall Semester Year 4

3	HESC 4453 Parenting/Family Dynamics
3	HESC 4753 Family Financial Management
3	U.S. History Core Elective
6	General Electives – upper division
<b>15</b>	<b>Semester hours</b>

#### Spring Semester Year 4

3	HESC 4813 Human Factors in Interior Design
12	General Electives – upper division
<b>15</b>	<b>Semester hours</b>
<b>124</b>	<b>Total Hours</b>

## HUMAN DEVELOPMENT, FAMILY SCIENCES, AND RURAL SOCIOLOGY (HDFSRS)

Peggy Whan  
Area Coordinator  
104 Home Management House  
479-575-5129

Students majoring in human development and family sciences prepare for one of the fastest growing employment opportunities in the country. The human services area includes jobs that serve people from conception through the last stages of life. Students develop skills for working with individuals and families in governmental, private, and nonprofit organizations. Three concentrations are offered:

### Child Development (CDEV)

This concentration is for students who desire in-depth knowledge of children and programs for children from birth to age 12. The focus on children covers issues from the prenatal to early adolescence. Graduates may work as preschool teachers, day-care directors, specialists in the field of child life, and as child advocates.

### Birth through Kindergarten (BRKD)

The knowledge and skills developed in this program will prepare students to work with children from birth through five years of age in various settings.

### Lifespan (LSPN)

This area of study covers the care issues faced by families and individuals in contemporary society. The knowledge and skills developed in this program will prepare the student to work in areas such as aging, parent education, financial and consumer counseling, youth services, and other human service type careers.

### Requirements for a Major in Human Development, Family Sciences and Rural Sociology

(See page 40 for University Core and page 70 for B.S.H.E.S. requirements)

#### Communications (12 hours)

- \_\_ ENGL 1013 Composition I
- \_\_ ENGL 1023 Composition II
- \_\_ ENGL 2003 Advanced Composition or, if exempt, COMM, ENGL, Foreign Language, JOUR Exemption Elective – See page 41 for exemption information
- \_\_ COMM 1313 Fundamentals of Communication

#### U.S. History or Government (3 hours)

Choose 3 hours from U.S. History University Core – See page 40

#### Mathematics (3 hours)

- \_\_ MATH 1203 College Algebra or higher level math

#### Sciences (8 hours)

Choose 8 hours from Science University Core – See page 40

#### Fine Arts and Humanities (6 hours)

Choose 6 hours in two categories from “State Minimum Fine Arts/ Humanities Core” (categories a and b – See page 40.)

#### Social Sciences University Core Courses (9 hours)

- \_\_ PSYC 2003 General Psychology
- \_\_ RSOC 2603 Rural Sociology or SOCI 2013 General Sociology
- \_\_ HESC 2413 Family Relations

### Additional Course Requirements for Child Development Concentration

#### Child Development Concentration Courses (47 hours)

- \_\_ HESC 1213 Nutrition in Health

- \_\_ HESC 1501 Orientation to HESC
- \_\_ HESC 2402 / 2401L Infant and Toddler Development and lab
- \_\_ HESC 2433 Child Development
- \_\_ HESC 3402 / 3401L Child Guidance and lab
- \_\_ HESC 3423 Adolescent Development
- \_\_ HESC 4423 Adult Development
- \_\_ HESC 4453 Parenting and Family Dynamics
- \_\_ HESC 4463 Administration and Evaluation of Child Development Programs
- \_\_ HESC 4472 / 4472L Child Development Practicum and lab
- \_\_ HESC 4493 Public Policy Advocacy for Children and Families
- \_\_ HESC 4753 Family Financial Management
- \_\_ CIED 3023 Survey of Exceptionalities
- \_\_ CIED 3103 Children's Literature
- \_\_ CIED 3113 Emergent and Developmental Literacy
- \_\_ SCWK 3633 Problems of Child Welfare

#### Child Development Electives (Choose 6 hours)

- \_\_ HESC 1403 Lifespan Development
- \_\_ HESC 2443 The Hospitalized Child
- \_\_ HESC 3443 Families in Crisis
- \_\_ HESC 3763L Family Resource Management Lab
- \_\_ HESC 4433 Dynamic Family Interaction
- \_\_ HESC 4443 Gerontology
- \_\_ HESC 4483 Internship in HDFS
- \_\_ RSOC 2603 Rural Sociology
- \_\_ RSOC 4603 Environmental Sociology
- \_\_ RSOC 4623 Introduction to Community Development

#### General Electives (30 hours)

### 124 Total Hours

### Additional Course Requirements for Birth through Kindergarten Concentration

Birth through Kindergarten Concentration Courses (58 hours)

- \_\_ HESC 1213 Nutrition in Health
- \_\_ HESC 1411L Observation of Children
- \_\_ HESC 1501 Orientation to HESC
- \_\_ HESC 2402/2401L Infant and Toddler Development and lab
- \_\_ HESC 2433 Child Development
- \_\_ HESC 3402/3401L Child Guidance and lab
- \_\_ HESC 3423 Adolescent Development
- \_\_ HESC 4313 Building Family and Community Relationships
- \_\_ HESC 4332/4332L Curriculum and Assessment Birth to Three Years and lab
- \_\_ HESC 4342/4342L Curriculum and Assessment Three Years-Kindergarten and lab
- \_\_ HESC 4373 Field Experience in Birth-Kindergarten Programs
- \_\_ HESC 4423 Adult Development
- \_\_ HESC 4453 Parenting and Family Dynamics
- \_\_ HESC 4463 Administration and Evaluation of Child Development Programs
- \_\_ HESC 4753 Family Financial Management
- \_\_ CIED 3023 Survey of Exceptionalities
- \_\_ CIED 3103 Children's Literature
- \_\_ CIED 3113 Emergent and Developmental Literacy
- \_\_ HIST 3383 Arkansas and the Southwest
- \_\_ SCWK 3633 Problems of Child Welfare

#### General Electives (25 hours)

### 124 Total Hours

**Additional course requirements for Lifespan Concentration**

**Lifespan Concentration Courses** (43 hours)

- \_\_ HESC 1213 Nutrition in Health
- \_\_ HESC 1403 Lifespan Development
- \_\_ HESC 1501 Orientation to HESC
- \_\_ HESC 2433 Child Development
- \_\_ HESC 3423 Adolescent Development
- \_\_ HESC 3443 Families in Crisis
- \_\_ HESC 4423 Adult Development
- \_\_ HESC 4433 Dynamic Family Interaction
- \_\_ HESC 4443 Gerontology
- \_\_ HESC 4453 Parenting and Family Dynamics
- \_\_ HESC 4463 Administration and Evaluation of Child Development Programs

- \_\_ HESC 4493 Public Policy Advocacy
- \_\_ HESC 4753 Family Financial Management
- \_\_ CNED 3053 The Helping Relationship
- \_\_ SCWK 3163 On Death and Dying

**Lifespan Concentration Electives** (Choose 6 hours)

- \_\_ HESC 2402/2401L Infant and Toddler Development and lab
- \_\_ HESC 2443 The Hospitalized Child
- \_\_ HESC 3402/3401L Child Guidance and lab
- \_\_ HESC 3763L Family Resource Management Lab
- \_\_ HESC 4483 Internship in Human Development and Family Studies
- \_\_ RSOC 2603 Rural Sociology
- \_\_ RSOC 4603 Environmental Sociology
- \_\_ RSOC 4623 Introduction to Community Development

**Statistics and Research Methods** (6-7 hours)

**General Electives** (27-28 hours)

**124 Total Hours**

**Human Development, Family Sciences, and Rural Sociology Eight-Semester Degree Program with Child Development Concentration**

Students wishing to follow the degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

Fall Semester Year 1	
3	ENGL 1013 Composition I
1	HESC 1501 Orientation to HESC
3	COMM 1313 Fundamentals of Communications
3	MATH Core elective
3	History Core Elective
3	Fine Arts Core Elective
<b>16</b>	<b>Semester hours</b>
Spring Semester Year 1	
3	PSYC 2003 General Psychology
4	Science Core Elective
3	HESC 2413 Family Relations
3	ENGL 1023 Composition II
3	General Elective
<b>16</b>	<b>Semester hours</b>
Fall Semester Year 2	
3	HESC 1213 Nutrition in Health
3	HESC 2402/2401L Infant & Toddler Development and lab
3	Humanities Core Elective
3	General Elective
4	Science University Core Elective
<b>16</b>	<b>Semester hours</b>

Spring Semester Year 2	
3	HESC 2433 Child Development
3	ENGL 2003 Advanced Composition or Exemption Elective
3	SOCI 2013 General Sociology or RSOC 2603 Rural Sociology
6	General Electives
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 3	
3	CIED 3103 Children's Literature
3	CIED 3113 Emergent & Developmental Literacy
3	SCWK 3633 Problems of Child Welfare
3	HESC 3402/3401L Child Guidance and lab
3	CDEV Elective
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 3	
3	HESC 3423 Adolescent Development
4	HESC 4472/4472L Child Development Practicum and lab
3	CIED 3023 Survey of Exceptionalities
3	CDEV Elective
3	General Elective
<b>16</b>	<b>Semester hours</b>
Fall Semester Year 4	
3	HESC 4753 Family Financial Management
3	HESC 4423 Adult Development
3	HESC 4463 Administration & Evaluation of Child Development Programs
3	HESC 4493 Public Policy Advocacy
3	General Electives
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 4	
3	HESC 4453 Parenting and Family Dynamics
12	General Electives
<b>15</b>	<b>Semester hours</b>
<b>124</b>	<b>Total Hours</b>

**Human Development, Family Sciences, and Rural Sociology Eight-Semester Degree Program with Birth through Kindergarten Concentration**

Students wishing to follow the degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

Fall Semester Year 1	
3	ENGL 1013 Composition I
1	HESC 1501 Orientation to HESC
3	COMM 1313 Fundamentals of Communications
3	MATH Core Elective
3	Fine Arts Core Elective
3	General Elective
<b>16</b>	<b>Semester hours</b>
Spring Semester Year 1	
3	HESC 2413 Family Relations
3	PSYC 2003 General Psychology
3	ENGL 1023 Composition II
4	Science Core Elective
3	General Elective
<b>16</b>	<b>Semester hours</b>
Fall Semester Year 2	
3	HESC 1213 Nutrition in Health
3	HESC 2402/2401L Infant & Toddler Development and lab
4	Science Core Elective
3	SOCI 2013 General Sociology or RSOC 2603 Rural Sociology
3	General Electives
<b>16</b>	<b>Semester hours</b>

Spring Semester Year 2	
3	HESC 2433 Child Development
1	HESC 1411L Observation of Children
3	ENGL 2003 Advanced Composition or Exemption Elective
3	History Core Elective
6	General Electives
<b>16</b>	<b>Semester hours</b>
Fall Semester Year 3	
3	HESC 3402/3401L Child Guidance and lab
3	CIED 3103 Children's Literature
3	CIED 3113 Emergent & Developmental Literacy
3	SCWK 3633 Problems of Child Welfare
3	General Elective
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 3	
3	HESC 3423 Adolescent Development
4	HESC 4332/4332L Curriculum & Assessment Birth to Three Year and lab
3	HESC 4453 Parenting and Family Dynamics
3	CIED 3023 Survey of Exceptionalities
3	General Elective
<b>16</b>	<b>Semester hours</b>
Fall Semester Year 4	
3	HESC 4753 Family Financial Management
3	HESC 4423 Adult Development
3	HESC 4463 Administration & Evaluation of Child Development Programs
4	HESC 4342/4342L Curriculum and Assessment Three to Kindergarten and Lab
1	General Elective
<b>14</b>	<b>Semester hours</b>
Spring Semester Year 4	
3	HESC 4313 Building Family & Community Relationships
3	HESC 4373 Field Experience in Birth to Kindergarten Programs
3	HIST 3383 Arkansas and the Southwest
3	Humanities Core Elective
3	General Electives
<b>15</b>	<b>Semester hours</b>
<b>124</b>	<b>Total Hours</b>

**Human Development, Family Sciences, and Rural Sociology Eight-Semester Degree Program with Life Span Concentration**

Students wishing to follow the degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

Fall Semester Year 1	
3	ENGL 1013 Composition I
1	HESC 1501 Orientation to HESC
3	MATH Core Elective
3	HESC 1403 Lifespan Development
3	Fine Arts Core Elective
3	General Elective
<b>16</b>	<b>Semester hours</b>
Spring Semester Year 1	
3	PSYC 2003 General Psychology
4	Science Core Elective
3	HESC 2413 Family Relations
3	ENGL 1023 Composition II
3	General Elective
<b>16</b>	<b>Semester hours</b>
Fall Semester Year 2	
3	HESC 1213 Nutrition in Health
3	History Core Elective
4	Science Core Elective
3	COMM 1313 Fundamentals of Communications

3	General Elective
<b>16</b>	<b>Semester hours</b>
Spring Semester Year 2	
3	HESC 2433 Child Development
3	HESC 3423 Adolescent Development
3	SOCI 2013 General Sociology or RSOC 2603 Rural Sociology
3	Humanities Core Elective
3	General Elective
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 3	
3	HESC 3443 Families in Crisis
3-4	Statistics Elective. Select from PSYC 2013 Introduction to Statistics or STAT 2303 Principles of Statistics or SOCI 3303/3301L Social Data and Analysis and lab or WCOB 1033 Data Analysis and Interpretation
3	ENGL 2003 Advanced Composition or Exemption Elective
3	LSPN Elective
3-4	General Elective
<b>15-16</b>	<b>Semester hours</b>
Spring Semester Year 3	
3	SCWK 3163 On Death and Dying
3	Research Methods Elective: Select from PSYC 3073 Research Methods or SOCI 3313 or SCWK 4073
3	LSPN Elective
6	General Electives
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 4	
3	HESC 4493 Public Policy Advocacy
3	HESC 4753 Family Financial Management
3	HESC 4453 Parenting and Family Dynamics
3	HESC 4423 Adult Development
3	HESC 4463 Administration & Evaluation of Child Development Programs
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 4	
3	HESC 4433 Dynamic Family Interaction
3	HESC 4443 Gerontology
3	CNED 3053 The Helping Relationship
6-7	General Electives
<b>15-16</b>	<b>Semester hours</b>
<b>124</b>	<b>Total Hours</b>

**Minor in Human Development and Family Sciences (HDFS-M)**

18 hours to include the following:

- \_\_\_ HESC 1403 Life Span Development
- \_\_\_ HESC 2413 Family Relations
- Choose 12 hours from:
- \_\_\_ HESC 2402/2401L Infant and Toddler Development and lab
- \_\_\_ HESC 2433 Child Development
- \_\_\_ HESC 2443 The Hospitalized Child
- \_\_\_ HESC 3402/3401L Child Guidance and lab
- \_\_\_ HESC 3423 Adolescent Development
- \_\_\_ HESC 3443 Family in Crisis
- \_\_\_ HESC 3763L Family Resource Management Lab
- \_\_\_ HESC 4423 Adult Development
- \_\_\_ HESC 4443 Gerontology
- \_\_\_ HESC 4453 Parent/Family Dynamics
- \_\_\_ HESC 4463 Administration and Evaluation of Child Development Programs
- \_\_\_ HESC 4493 Public Policy Advocacy for Children and Families
- \_\_\_ HESC 4753 The Family Financial Management
- \_\_\_ RSOC 2603 Rural Sociology
- \_\_\_ RSOC 4603 Environmental Sociology

**INTERIOR DESIGN (IDES)**

G. Marie Gentry  
Area Coordinator  
17B Home Economics Building  
479-575-2578

Interior design, a CIDA-accredited program, combines an excellent foundation of professional courses that are enhanced by classes in human environmental sciences, art, architecture, and business. A goal of the program is to foster a sense of personal and professional responsibility and service through design. Students are actively involved in design competitions and domestic and international travel. Both overnight and day field trips are required for studio courses. Elective-credit study tour opportunities are offered on a regular basis, and students are encouraged to participate. Graduates are placed in contract, residential, and institutional interior design firms, architectural firms, historic preservation, lighting design, and contract and residential sales.

Transfer students seeking advanced placement must submit a portfolio for faculty review prior to beginning any studio course. Review of the portfolio will allow appropriate placement based on demonstrated skills and earned college credit. Students may be required to wait for the appropriate studio sequence. Transfer students placed into the program prior to sophomore portfolio review will be required to participate in the sophomore review process.

A sophomore portfolio review is an important component of the academic program. The review of studio work occurs in December of the sophomore year. The submitted materials will follow guidelines prepared by the interior design faculty and will include examples of work from Studios 1, 2, and 3. All full-time interior design faculty members review portfolios. Students will receive a pass or probation. If the portfolio is acceptable (pass), the student may continue, without remediation or additional required work, to junior-level studios. If the portfolio is not acceptable (probation), the student must comply with faculty recommendations that may include repeating a course(s), taking supplemental courses to strengthen a weakness, or submission of reworked studio projects. Students on probation must resubmit a portfolio at the end of the spring semester following the initial review. In the event that skills are not improved, the student will not be permitted to progress into upper-level studios.

The studio sequence increases in complexity throughout the curriculum. The rigor of the program requires a significant commitment of time and energy. Students can expect to spend a minimum of 3 hours out of class for each hour of studio time to complete projects. Participation in the supervised internship experience is required for graduation. The faculty reserves the right to retain student work for accreditation and recruitment purposes.

A professional advisory board supports the program and serves as external critics/jurors. Faculty and students participate in professional design association activities. The faculty is composed of well-qualified educators and practitioners who foster an attitude of inquiry and learning based on their individual skills and interests. Intellectual development of students is stimulated and leadership qualities enhanced throughout the four-year curriculum. The Interior Design Organization (IDO) allows for interaction of students with professionals in interior design and allied professions.

In response to industry demands, the program requires laptop computers. Students must acquire a laptop for use in studio courses that are taught in the spring semester of the second year of the program. Specifications for laptops must be obtained from interior design faculty prior to purchase by the student.

**Requirements for a Bachelor of Interior Design (B.I.D.) Degree**

(See page 40 for University Core and page 70 for college requirements)

**Communications** (12 hours)

- \_\_\_ ENGL 1013 Composition I
- \_\_\_ ENGL 1023 Composition II
- \_\_\_ ENGL 2003 Advanced Composition or COMM, ENGL, JOUR

Exemption Elective – See page 41 for exemption information

\_\_\_ COMM 1313 Fundamentals of Communication

**U.S. History** (3 hours)

Choose 3 hours from U.S. History University Core – See page 40

**Mathematics** (3 hours)

\_\_\_ MATH 1203 College Algebra or higher level math

**Physical and Biological Sciences** (8 hours)

Choose 8 hours from Science University Core – See page 40

**Fine Arts and Humanities** (6 hours)

Choose 3 hours from category a and 3 hours from category b from the "State Minimum Fine Arts/Humanities Core" – See page 40

**Social Science** (9 hours)

\_\_\_ ECON 2013 Principles of Macroeconomics **or** ECON 2023 Principles of Microeconomics **or** ECON 2143 Basic Economics-Theory and Practice **or** AGECE 1103 Principles of Agricultural Microeconomics **or** AGECE 2103 Principles of Agricultural Macroeconomics

Choose 6 hours from:

- \_\_\_ PSYC 2003 General Psychology
- \_\_\_ SOCI 2013 General Sociology
- \_\_\_ ANTH 1023 Introduction to Cultural Anthropology

**Interior Design Major Requirements**

Art/Architecture (6 hours)

\_\_\_ ARCH 4433 History of Architecture III

Choose 3 hours from:

- \_\_\_ ARTS 1013 Drawing Fundamentals I
- \_\_\_ ARTS 1313 Two-Dimensional Design
- \_\_\_ ARTS 1323 Three-Dimensional Design
- \_\_\_ ARTS 2013 Figure Drawing I
- \_\_\_ ARTS 2313 Computer Applications in Art
- \_\_\_ ARTS 3203 Sculpture I
- \_\_\_ ARTS 3333 Color Studies
- \_\_\_ ARTS 3363 Graphic Design I
- \_\_\_ ARHS 2913 Art History Survey I
- \_\_\_ ARHS 2923 Art History Survey II

Human Environmental Sciences Core (4 hours)

\_\_\_ HESC 1501 Orientation to HESC

\_\_\_ HESC 2413 Family Relations

**Interior Design** (58 hours)

- \_\_\_ HESC 1031 About the Profession
- \_\_\_ HESC 1034 Studio 1: Design Exploration 1
- \_\_\_ HESC 1044 Studio 2: Design Exploration 2
- \_\_\_ HESC 2805 Studio 3: Basic Space Planning and Communication
- \_\_\_ HESC 2815 Studio 4: Design Programming
- \_\_\_ HESC 2823 Interior Design Materials and Resources
- \_\_\_ HESC 2853 Intro to Textiles for Interior Designers
- \_\_\_ HESC 2883 History of Interior Design
- \_\_\_ HESC 3805 Studio 5: Design and Construction
- \_\_\_ HESC 3815 Studio 6: Large Scale Commercial Interiors
- \_\_\_ HESC 3843 Building Systems ID
- \_\_\_ HESC 4805 Studio 7: Comprehensive Design Process I
- \_\_\_ HESC 4813 Human Factors in ID
- \_\_\_ HESC 4815 Studio 8: Comprehensive Design Process II (5)
- \_\_\_ HESC 4823 Professional Practice for ID
- \_\_\_ HESC 4811 Internship for ID

**Non-Credit Requirement**

\_\_\_ WCOB 1120 Computer Competency

**Business Administration** (Choose 6 hours)

- \_\_\_ FINN 3003 Personal Financial Management
- \_\_\_ FINN 3933 Real Estate Principles
- \_\_\_ FINN 4413 Real Estate Investment and Appraisal

- \_\_ FINN 4433 Real Estate Finance
- \_\_ MKTG 3433 Introduction to Marketing Strategy,

**Electives (9 hours)**

Recommended:

- \_\_ HESC 485V Design Tours (1 hour)
- \_\_ HESC 3841 Portfolio Work Shop
- \_\_ HESC 455V Special Topics

**124 Total Hours**

**Interior Design Nine-Semester Degree Program**

Students wishing to follow the degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

Fall Semester Year 1	
1	HESC 1031 Intro to the Profession
4	HESC 1034 Studio 1
1	HESC 1501 Orientation to HESC
3	HESC 2883 History of Interiors
3	ENGL 1013 Composition I
3	MATH 1203 College Algebra or higher level math
0	WCOB 1120 Computer Competency Requirement
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 1	
4	HESC 1044 Studio 2
3	HESC 2853 Intro to Textiles for Interior Design
3	Social Science Elective
3	ENGL 1023 Composition II
3	COMM 1313 Fundamentals of Communications
<b>16</b>	<b>Semester hours</b>
Fall Semester Year 2	
5	HESC 2805 Studio 3
3	HESC 2823 ID Materials & Resources
3	Social Science Elective
3	Social Science Economics Core Elective
<b>14</b>	<b>Semester hours</b>
Spring Semester Year 2	
5	HESC 2815 Studio 4
3	HESC 3843 Building Systems for ID
3	HESC 2413 Family Relations
3	Fine Arts/Humanities Core Elective
3	General Elective
<b>17</b>	<b>Semester hours</b>

Fall Semester Year 3	
5	HESC 3805 Studio 5
4	Science Core Elective
3	Business Elective
3	General Elective
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 3	
5	HESC 3815 Studio 6
3	HESC 4813 Human Factors in ID
3	HESC 4823 Professional Practice
3	ENGL 2003 Advanced Composition or Exemption Elective
3	Fine Arts/Humanities Core Elective
<b>17</b>	<b>Semester hours</b>
Summer Semester Year 3	
1	HESC 4811 Internship for Interior Design
Fall Semester Year 4	
5	HESC 4805 Studio 7
3	ARCH 4433 Architectural History III
3	Art Elective
3	History Core Elective
<b>14</b>	<b>Semester hours</b>
Spring Semester Year 4	
5	HESC 4815 Studio 8
3	General Elective
4	Science Core Elective
3	Business Elective
<b>15</b>	<b>Semester hours</b>
<b>124</b>	<b>Total Hours</b>

**Minor in Interior Design (IDES-M)**

All students seeking an Interior Design minor are required to complete 28 hours in the following courses or their equivalencies:

- \_\_ HESC 1034 Studio I Design Exploration I
- \_\_ HESC 1044 Studio II Design Exploration II
- \_\_ HESC 2805 Studio III Basic Space Planning and Communication

Choose 15 hours from:

- \_\_ HESC 2823 Interior Design Materials and Resources
- \_\_ HESC 2853 Introduction to Textiles for Interior Designers
- \_\_ HESC 2883 History of Interior Design
- \_\_ HESC 3843 Building Systems for Interior Design
- \_\_ HESC 4813 Human Factors in Interior Design
- \_\_ HESC 4823 Professional Practice for Interior Design
- \_\_ HESC 455V Special Topics

SEE PAGE 351 FOR HUMAN ENVIRONMENTAL SCIENCES (HESC) COURSES.



# Fay Jones School of Architecture

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**Dean**

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<http://architecture.uark.edu>

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**MISSION AND OBJECTIVES**

The Fay Jones School of Architecture at the University of Arkansas houses professional design programs of architecture and landscape architecture together with liberal studies programs in each discipline. The school's programs in architecture and landscape architecture include traditional five-year professional degree programs and four-year pre-professional degrees, combining studio design education with innovative teaching in history, theory, technology and urban design. A broad range of course offerings equips graduates with the knowledge required for the challenges of a changing world. Design instruction occurs in a carefully planned studio sequence, providing educational experiences appropriate for students who wish to pursue both traditional and non-traditional forms of professional practice. Fundamental principles and techniques of critical analysis are stressed, and the curriculum strives to empower students by developing skill, knowledge, and a deep sense of responsibility to the environment and to the cultures they will serve. Design studio projects survey issues and opportunities in built and natural settings, as well as complex social, physical, and cultural relations that constitute the human-made environment.

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**FACILITIES AND RESOURCES**

The School's administrative offices and department of architecture are located in Vol Walker Hall, formerly the University's library building, which has been extensively remodeled to meet the needs of the department and school. The landscape architecture department is located in Memorial Hall, formerly the university's student union.

The University's location in Northwest Arkansas, an area experiencing rapid growth and change, affords unusual opportunity to study the impact of urbanization in a rural setting. The school includes as part of its programs field trips, guest lectures, research assignments, and other teaching techniques

oriented toward major urban and rural problems as means to broaden the educational base of its students.

Classes also are offered in a variety of settings away from the campus. Options include a semester in the Rome Study Center for Architecture and the Humanities near the Piazza Navona in Rome, Italy; the Mexico Summer Urban Studio in Mexico City; and European Field Studies in Italy, France and England.

**Design Studio**

The design studio sequence is the core of each discipline within the School of Architecture. Studio exercises are complemented by topical lectures informing the process. Knowledge from those lectures is expected to inform work produced in design studios. This method is intended to develop and nurture the intellectual and creative skills of students and to allow them to approach problem solving in a disciplined, logical, and analytical manner.

Design professionals must be able to conceptualize responses to project programs, to communicate with clients, to present ideas verbally, and to demonstrate ideas graphically. They also need to maintain technical knowledge of building or ecology and construction technology, must be able to negotiate with contractors and owners to administrate construction, and should be prepared to market their services. In other words, each designer fulfills a multitude of roles, whether practicing alone or as a team member in a large multidisciplinary organization.

The design studio consists of a series of projects of increasing complexity, all requiring three-dimensional problem solving, conceptualization, and final presentation to the studio critic, other faculty members, and fellow students. The amount of material to be covered, the fast pace of assignments, and the presentation of work for faculty and other students combine to produce a highly charged studio atmosphere.

**Library Resources**

The School of Architecture is served by the Fine Arts Library, a branch of the University Libraries. The collections in the Fine Arts Library include traditional print resources on the visual arts (painting, drawing, sculpture, ceramics, printmaking, and photography), architecture, and landscape architecture. Types of materials include books, exhibition catalogs, reference books, and periodicals. Electronic resources supporting the art, architecture, and landscape architecture programs include Art Index, Avery Index, Bibliography of the History of Art, and Grove Dictionary of Art among others. The Fine Arts Library also maintains course reserves for faculty wishing to place materials on reserve for their classes.

The C. Murray Smart Media Center, located in Vol Walker Hall, contains an online digital image database with more than 40,000 images relating to architecture, architectural history, landscape and urban design. This resource, along with a collection of more than 80,000 slides and 900 video programs, is

available to faculty and students of the School of Architecture. The center also provides assistance to students with digital imaging technology, including the use of scanners and digital cameras.

### Computer Resources

The School of Architecture maintains two fully equipped computer labs that are available to all faculty and students around the clock. The computer labs are staffed during business hours by a computer technology coordinator who can assist with any problems that may arise. The Visualization Lab houses a three-axis computer numerically controlled (CNC) router, two laser cutters and a three-dimensional printer that allow students and faculty to transform software files into physical models. Finally, the school offers lectures, workshops and access to design software that supports collaboration between architects, landscape architects, engineers, contractors, fabricators and clients.

### Materials Shop

The Materials Shop supports construction projects ranging from light fixtures and furniture to three-dimensional models. The facility is staff by one full-time technician and is available to students and faculty for design, coursework, and research projects. The workshop houses multiple table saws, band-saws, chop saw, scroll saw, drill presses, jointer, planer, lathe, belt sanders, metal break and many hand tools.

### Garvan Woodland Gardens

Located on Lake Hamilton in Hot Springs, Arkansas, Garvan Woodland Gardens is an integral unit of the School of Architecture. The land and endowment were the result of a bequest to the department of landscape architecture in 1985. This 210-acre woodland habitat features a variety of garden settings and unique architectural structures designed and developed by world-renowned specialists in botanical gardens, landscape architecture and architecture. An internship program offers opportunities for summer study and employment.

### University of Arkansas Community Design Center

Since 1995 the University of Arkansas Community Design Center (UACDC) has provided award-winning, innovative planning to communities and organizations throughout Arkansas. Using teams of students and professional staff, UACDC prepares multifaceted design solutions that promote economic development, enhanced ecologies and improved public health. The center's work addresses new challenges in affordable housing, urban sprawl, environmental planning and management of regional growth or decline. UACDC services have been enhanced by collaborations with the Department of Landscape Architecture, the Department of Biological and Agricultural Engineering, the Center for Business and Economic Research in the Sam Walton College of Business, the Arkansas Forestry Commission, Audubon Arkansas and Wal-Mart Stores Inc.

## DEGREES OFFERED

The School of Architecture offers five-year professional programs in architecture and landscape architecture. Each program culminates in a professional degree, the Bachelor of Architecture (B.Arch.) or Bachelor of Landscape Architecture (B.L.A.).

The Bachelor of Architecture prepares students who aspire to registration and licensure to practice architecture. Architects do more than design and plan buildings. The architect's unique talents create environments that serve the psychological, economic, and spiritual needs of their clients and communities. Architects help cities and small communities to become safe, healthy, and wholesome places to live. Perhaps most important, architects create, preserve, and inspire beauty in the built environment.

The Bachelor of Landscape Architecture is an accredited five-year first professional degree that prepares students to practice landscape architecture as a licensed professional. The discipline of landscape architecture balances human

requirements with landscape concerns. Landscape architects design, plan, and manage the land through understanding the interrelationships among the spirit of place, local ecology, individuals, and communities. They create outdoor spaces and rebuild ecological systems that meet societal needs, protect or enhance the natural environment, and respond to cultural conditions. Design and planning projects span the breadth of the profession to include urban design and town planning, public parks, land conservation, storm water management systems, ecological rehabilitation, historic landscape preservation, private gardens, housing developments, institutional and business campuses, and golf courses.

The School also offers two four-year programs, culminating in non-accredited degrees: the Bachelor of Science in Architectural Studies and the Bachelor of Science in Landscape Architectural Studies. These degrees serve students who, although interested in the design disciplines, do not aspire to professional practice. The four-year programs are particularly well suited for students who seek careers in allied disciplines, including historic preservation, environmental law, and history of architecture, as well as for students looking forward to graduate education in architecture, landscape architecture and the allied disciplines.

### Minors

Students in architecture and landscape architecture may pursue an academic minor in approved degree programs of other colleges on campus, providing they meet the specific requirements for that minor.

## SCHOOL ADMISSION REQUIREMENTS

### University of Arkansas Department of Architecture Admissions

The University of Arkansas Department of Architecture maintains three distinct tracks of study for entering freshmen to accommodate all students interested in pursuing a degree in architecture. The three tracks of study are designed to foster learning and to build strong foundations for students entering the program with different skill levels and high school backgrounds. Students accepted to the University of Arkansas with the intention to participate in the B.Arch. or B.S. programs in the Department of Architecture will be classified as "Regular Admissions" (Fall/Spring Studio Students or Spring/Summer Studio Students) or "Pre-Architecture Admissions." Please contact the School's Advising Center for a complete description of admission requirements.

### Fall/Spring Studio

Students must meet all of the following requirements:

- 25 ACT or better
- 3.5 GPA in high school
- College preparatory curriculum to include physics and an upper level math (Pre-Calculus or higher)

Space in the studio is limited to 60 students with priority given to first year students who return the School of Architecture Supplemental Information Form by April 1. The form will be sent to all students admitted to the University of Arkansas who choose any of the School of Architecture majors on their University of Arkansas general admissions application.

Students are reviewed at the end of the fall semester and may continue the program if they meet the following criteria:

- "C" or better in ARCH 1014, Architectural Design I
- "C" or better in PHYS 1044 Physics for Architects I or an approved equivalent
- Pass ARCH 1212, Design Methods I
- Maintain a 2.0 GPA

Students who do not meet those criteria will receive a letter and be advised accordingly.

### Spring/Summer Studio

These students meet the University of Arkansas minimum requirements for admission but do not meet the above criteria for fall/spring studio. These students may continue into ARCH 1014, Architectural Design I in the spring if they meet the following criteria:

- “C” or better in PHYS 1044 Physics for Architects I or an approved equivalent
- Maintain a 2.0 GPA

Students who do not meet these criteria will be delayed until they satisfy the admissions criteria for the Department of Architecture. Students will be reviewed at the end of the spring semester and will not be allowed to continue in the program if they do not meet the following criteria:

- “C” or better In ARCH 1014, Architectural Design I
- Pass ARCH 1212, Design Methods I
- Maintain a 2.0 GPA

**Pre-Architecture Admissions:** Students who are accepted to the University of Arkansas on a provisional basis cannot begin the Fall/Spring or Spring/Summer sequence until the provisions of their admission are met. These are students who have GPAs or ACT scores below the University of Arkansas minimum or have deficiencies in one or more areas (typically math or English). The Pre-Architecture track of study will, in most cases, add one year to their education. Students follow a specified curriculum based on individual needs and are allowed to enter the design sequence only when their provisions are met and a cumulative GPA of 3.00 is achieved. Please see the School’s Advising Center for additional information regarding the review process, grade criteria, and continuance in the program.

### Architecture Department Transfer Students and International Students:

- Completion of first semester core courses (to include an approved general physics course, survey of calculus or finite mathematics and general education core requirements with a minimum of 12 hours credit and a GPA of 2.67).
- To enter Design I in the fall, students must also meet the same requirements for freshmen admits
- To enter Design I in the spring, students must successfully pass Physics for Architects I (or an approved upper level physics course) with a minimum of C or better, complete survey of calculus or approved math course and maintain a 2.67 GPA overall.

International students must present a TOEFL minimum score of 550 to become eligible for acceptance into the department of architecture.

Lack of knowledge or misinterpretation of policies and/or regulations on the part of individual students will not be considered a valid reason for failure to fulfill requirements.

**Transferring from Accredited Schools of Architecture:** Students transferring from an accredited architectural program must have their architecture courses reviewed for placement and acceptance by submitting materials for review. Please contact the School’s Advising Center for a specific list of required materials.

**NOTE:** All students must complete or receive transfer credit for either PHYS 1044 “Physics for Architects I” or PHYS 2013/2011L “College Physics I”, MATH 2043 “Survey of Calculus” or MATH 2053 “Finite Mathematics” and all other first year university core curriculum courses prior to entry into ARCH 2016 “Architectural Design III” or ARCH 2114 “Architectural Technology I.”

Ultimate responsibility for completion of entrance requirements rests with each student. Please contact the School’s Advising Center, for a complete description of admission requirements.

### Admission to the Professional Program in Architecture

The department of architecture offers prospective students the opportunity to prepare for architectural practice or related endeavors. With this opportunity comes a responsibility for demonstrating a commitment to personal growth and success in the professional program.

Students are admitted to the first year of the architectural curriculum based on criteria established by the University and by the School of Architecture. They are evaluated by grades in course work and by grades each semester for performance and progress in the design studio sequence.

At the completion of the third year of the department of architecture curriculum, including completion of the 35 semester-credit hours of the University’s general education core requirement, students will be evaluated for admission to the Professional Program on the basis of academic performance in the University core and the Architecture curriculum comprising the sub-disciplines of History/Theory, Technology, and Design. Admission requires a majority vote of the Admissions Committee. Students are encouraged to take maximum advantage of the opportunities that professional and free electives provide for pre-professional development, cultivation of specialization in and related to the profession, and/or preparation for graduate education. Students admitted to the professional program will continue in the established studio curriculum sequence and are to complete the final two years of design studio at the UA School of Architecture. At the time of admission, however, the faculty may recommend or approve an alternative course of study that will allow students to pursue an area of concentration other than design in accordance with the letter and spirit of the curricula. Multidisciplinary alternatives may be developed using electives and coursework from business, engineering and other areas applicable to the practice of architecture.

The University Advanced Composition requirement must be completed either by course work or by exemption via an exam, prior to entry into the fifth year of the professional curriculum.

### University of Arkansas Department of Landscape Architecture Admissions

All students (including freshmen, international, and transfer students) admitted to the University of Arkansas are eligible for participation in the Landscape Architecture program in the School of Architecture. Space in the studio is limited with priority given to first year students who return the School of Architecture Supplemental Information Form by April 1. The form will be sent to all students admitted to the University of Arkansas who choose any of the School of Architecture majors on their University of Arkansas general admissions application.

Students who require developmental work because of low ACT or SAT scores or University-administered math placement examinations or who require courses to remove deficiencies may not register for courses carrying LARC departmental designations. Upon completion of required developmental work and maintaining a grade-point average of 2.00 or more on at least 12 credit hours, students may enroll in landscape architecture (LARC) courses. Please refer to “Admission to the Professional Program in Landscape Architecture” for required academic levels for entering the program. Please contact the School’s Advising Center for more information.

### Admission to the Professional Program in Landscape Architecture

The Department of Landscape Architecture offers a professional education grounded in liberal arts studies, which prepares students for landscape architecture practice in the private, public, and not-for-profit sectors. Successful completion of the program requires commitment to personal growth and excellence.

Students are admitted to the first year of the Landscape Architecture program based upon the established criteria by the University of Arkansas. Academic and professional performance is evaluated by grades in the course work, design studios, and construction labs. After two years in the program, students submit a portfolio of work at the end of the spring semester for application to continue in the professional program. Applicants who have a grade-point average below a 1.67 will not be allowed to continue in the program. Contact department head for specific portfolio submission requirements and schedule of deadlines. All candidates will be notified of their acceptance or rejection in writing, normally by the first of August.

Students will be evaluated on general academic performance and in the Landscape Architectural curriculum as well as professional conduct. All department faculty serve on the admissions committee. Any appeal to the committee's decision may be made by submitting a letter to the department head one week before the first week of the subsequent fall semester. The appeal will be presented to the entire faculty for consideration and will require the candidate to present their case in person.

Students who fail to gain admission to the Bachelor of Landscape Architecture degree program will be referred to the department head and the School's academic adviser for appeal procedures and alternative degree programs in the School and the University.

## SCHOOL SCHOLARSHIPS

More than 70 awards and scholarships, including both merit and need-based scholarships, are available to students in the School of Architecture. Most are awarded annually on the basis of recommendations made by the Scholarship Committee of the School of Architecture. Students must complete three semesters in residence with a minimum of 15 hours per semester to meet eligibility requirements for most scholarships. Only work accomplished since entering the School of Architecture will be considered in determining merit awards based on grade-point averages.

Applications for scholarships are available for prospective and currently enrolled students at <http://architecture.uark.edu/126.php>

## STUDENT ORGANIZATIONS

### American Institute of Architecture Students

The American Institute of Architecture Students (AIAS) is a national organization whose purpose is "to organize architecture students and combine their efforts to advance the science and art of architecture, to promote excellence in architectural education, training and practice, and to foster an appreciation of architecture and related disciplines among all persons." All students in the School's architecture program are eligible for membership.

### American Society of Landscape Architects, Student Chapter

The purpose of the student chapter of the American Society of Landscape Architects is to bring together the landscape architecture students to combine their interests and efforts, to extend their knowledge of the profession of landscape architecture, and to help advance the profession while preparing for a professional career. All students in the School's landscape architecture program are eligible for membership.

### Tau Sigma Delta Honor Society

The Alpha Eta Chapter of Tau Sigma Delta is the only national collegiate honor society recognized in the fields of architecture, landscape architecture, and allied arts. All students of the School are eligible for membership.

Elections to membership are made by the existing membership, subject to approval by the faculty, from fourth-year and fifth-year students maintaining a minimum 3.00 cumulative grade-point average. In addition, leadership, character, and promise of professional merit are considered in making selections.

### Construction Specification Institute

Construction Specification Institute (CSI) is a nonprofit technical organization dedicated to the improvement of specifications and building practices in the construction industry through service, education, and research. Founded in 1948, CSI provides a forum for architects, engineers, specification writers, contractors, construction product representatives, students, and others in the construction industry.

### Sigma Lambda Alpha

Sigma Lambda Alpha, founded and chartered by the Council of Educators in Landscape Architecture (CELA), is an international honor society that encourages, recognizes and rewards academic excellence in preparation for the profession of landscape architecture. Any landscape architecture junior or senior with an average of 3.2 or higher is eligible for membership.

## SCHOOL ACADEMIC REGULATIONS

### Plus/Minus Grading System

The School of Architecture utilizes a plus/minus grading system that assigns numerical values to 12 different grades. These values are used for architecture or landscape architecture courses when grade-point averages are calculated. The 12-step grading system with assigned values is as follows:

A	4.00	C	2.00
A-	3.67	C-	1.67
B+	3.33	D+	1.33
B	3.00	D	1.00
B-	2.67	D-	0.67
C+	2.33	F	0.00

### Academic Policies – Department of Architecture

The following academic policies, beyond the requirements of the University, are applicable to all students in the Department of Architecture.

1. Any student receiving a grade of "D (+/-)" in a pre-professional program studio course is subject to a comprehensive review of their semester's work by the Design Review Committee. The Design Review Committee may require that the student retake the studio, prior to advancing to the next studio in sequence, in order to demonstrate competence for the required materials as evidenced by achieving a grade of "C" (2.00) or better. A student receiving an "F" in design studio must repeat that studio before progressing.
2. Each student's progress through the Design Studio sequence is monitored and governed by the faculty and subject to a Design Review process.
3. Admission to the Professional Degree Program in the Department of Architecture requires a minimum 2.00 grade-point average in the University Core and each of the sub-disciplines of Architecture: History/Theory, Technology and Design.
4. Enrollment in Architectural Design VII (ARCH 4016) is contingent upon admission to the Professional Program in architecture as described above.
5. Successful completion of the upper level studios of the professional degree program (ARCH 4016, ARCH 4026, ARCH 5016, ARCH 5026) requires demonstration of competence as evidenced

by achieving a grade of “C” (2.00) or better in those courses.

Failure to achieve this minimum standard will require retaking the studio.

6. Any student receiving an “I” in a design studio must complete all work necessary to receive a grade prior to the first day of the next studio in the student’s prescribed sequence to be eligible to enroll in that studio.
7. Prior to graduation, a student must present a 2.00 cumulative grade-point average at this institution in all work attempted including the University Core, electives, and in each of the sub-disciplines of Architecture: History/Theory, Technology and Design.

### **Design Review Procedure – Department of Architecture**

Design Review is a process initiated by a faculty member, department head or by a student in order that a committee comprising studio faculty may review a student’s design work within a studio course. The review process may be used by students to appeal grades and to seek resolution of conflicts with studio faculty in which it is believed there are questions of fairness and equity in the application of the published grading policy of the faculty member. Faculty reviews are predicated upon, but are not limited to, student work that may receive a “D” grade or lower.

Grade appeals initiated by students will occur during the week prior to the start of class in the subsequent semester. Petitions for this review must be made through the Advising Center prior to the scheduled meeting of the Design Review Committee. Grade appeals may be filed as soon as the student receives his or her final grade.

In all cases, the student shall exhibit, at the place and time specified by the Design Review Committee, ALL work assigned and attempted for the studio in the semester under review. Faculty are required to provide appropriate documentation including, but not limited to, the course syllabus, grading policy, and semester assignments. In the case of an appeal, the student is requested to meet with the faculty committee.

The outcome of the Design Review process may include:

1. A recommendation to the faculty member regarding the grade appeal of the student.
2. A requirement for the student to repeat the design studio course and any co-requisite.
3. A recommendation for enrollment in the subsequent studio course, while advising the student of the need to achieve and maintain a cumulative 2.00 (in the studio sequence) for admission to the professional program.

### **Grade Appeals – Department of Landscape Architecture**

Students in the Department of Landscape Architecture may appeal grades in the design studios as well as other professional courses in which it is believed that there are questions of fairness or equity in the application of the published grading policy of the faculty member. Appeals must be made in writing to the department head one week before the first week of the subsequent semester. The appeal will be presented to the entire Landscape Architecture faculty for consideration and may require the students to present their case in person.

### **Off-Campus Study Requirement**

Each student in the professional program in architecture is required to complete an approved off-campus study experience focusing upon complex urban relationships, and fostering cultural diversity. Approved programs in Architecture include a semester in Rome and a summer design studio in Mexico City.

Each student in the department of landscape architecture is required to

participate in a summer study in Europe. This program exposes students to urban design and planning approaches. The program takes place after the student’s third year of design studios.

A special international programs fee supports the School of Architecture’s international programs. These fees are assessed to all students participating in architecture and landscape architecture designated in the “Fees and Cost Estimates” section of this catalog. The international program fees offset costs of maintaining off-campus programs that are not a part of the School’s University-funded budget, as well as enhancing student-centered activities. The fee is assessed for each study abroad program. The fees are non-refundable under any circumstances including withdrawal from the respective professional programs. For further information, see notes on related program fees under “Fees and Cost Estimates” for the University.

### **Ownership of Work**

All original work submitted for credit, including design studio projects, becomes the property of the School of Architecture. Students are required to maintain portfolios documenting all academic and design studio work. Digital copies (compact discs) of all work completed in a studio must be submitted to the studio year coordinator in order to receive a grade for the studio.

### **School Computer Policy**

All students enrolled in the School of Architecture are required to supply, by the beginning of the second year, a personal computer matching or exceeding specifications issued by faculty. The specifications, which are updated annually, are available through the Advising Center or at <http://architecture.uark.edu/172.php>. A substantial amount of software may be required depending on specific course requirements. The School has two computer labs, one in each department, equipped for output and scanning for digital production. All studios are wired for Internet access.

## **HONORS PROGRAM**

### **The Department of Architecture Honors Program**

The mission of the Department of Architecture at the University of Arkansas is rooted in the best traditions of architectural education: responsibility and service to the societies and cultures to which we are inextricably connected, and the nurturing of the individual curiosity and capabilities of our students. To achieve the highest potential of these goals, the department faculty has developed the Department of Architecture Honors Program and participates in the programs of the University of Arkansas Honors College. The Architecture Honors Program provides opportunities for students of superior academic and creative ability to enhance and enrich their professional and liberal education. Students in the Architecture Honors Program are eligible to graduate cum laude, magna cum laude, and summa cum laude. All other students who attain a cumulative GPA of 3.5 or higher will be eligible to graduate with distinction, a classification separate from the cum laude awards.

The Architecture Honors Program offers two components: The Distinguished Scholars Program, which requires 44 credit hours of honors designated courses and the Departmental Scholars Program, requiring 24 credit hours of honors designated courses for the Bachelor of Architecture degree. Specific requirements for each program are detailed below. Eligible students in both the five-year Bachelor of Architecture curriculum and the four-year Bachelor of Science in Architectural Studies program are welcome to join the Honors Program.

## Invitation to Join the School of Architecture Honors Program

Upon admission to the University, students who present a composite ACT score of 28 (or higher) and a high school GPA of 3.5 or higher will be invited to enroll in the University of Arkansas Honors College. Concurrently, students majoring in Architecture or Architectural Studies will be invited to join the Architecture Honors Program as Distinguished Scholars. From the second semester of the third year onward, Architecture Honors Scholars are required to maintain a minimum cumulative GPA of 3.33 to remain in the program. Each student is encouraged to consult the Architecture Honors Committee and the Architecture Advising Center before deciding the level of honors distinction (Distinguished Scholar or Departmental Scholar) they wish to pursue and to maintain this advisory relationship throughout the student's matriculation in the program.

Transfer students may be invited to join the Architecture Honors Program as Distinguished Scholars or as Departmental Scholars if they maintain a cumulative GPA of 3.5 or higher in courses completed at the University of Arkansas by the end of the first semester of their third year of study, and a 3.33 GPA thereafter.

Every semester, the Architecture Advising Center will apprise the Architecture Honors Program Committee of students who have achieved this level of excellence and are eligible to join the Architecture Honors Program. Invitations are extended to students by the end of the semester in which the candidacy is advanced.

### Confirmation of Intent to Complete the Honors Program

At the end of the first semester of the third year, students will sign a form, confirming their intention to complete the remaining requirements for their Honors degree. Students found not to have successfully completed the Honors core course(s) needed to satisfy their Honors degree requirements (i.e., sufficient credits in University Core and/or Professional Core Honors courses) will be dismissed from the Honors program at this time.

### Dismissal from Architecture Honors Program

Architecture Honors Program students who fail to maintain a 3.5 or 3.33 cumulative GPA, depending on their year level, will receive a one-semester probation period prior to dismissal from the program.

### Architecture Honors Program Mentors

Every Architecture Honors Program student will be assigned an Honors Faculty Mentor. Students shall meet with their mentors at least once each semester to discuss the student's progress through the honors curriculum and his/her developing interests or focus in the discipline of architecture. The Honors Faculty Mentor also will serve as a committee member for the Honors Thesis/Research Project.

### Architecture Honors Thesis /Research Project

All honors students will pursue a research project during the final year of their undergraduate program. Honors students in the Bachelor of Architecture curriculum will invest 12 credit hours in a research/design thesis, articulating topics identified in the Honors Architectural Research Methods (ARCH 4723H) or the Methods of Research in Architectural History Colloquium. Honors students in the Bachelor of Science in Architectural Studies program invest six credit hours in the Honors thesis. Students pursuing the History of Architecture and Urbanism major concentration will develop traditional written Honors theses. Guidelines for topic selection and preparation of the Honors Thesis/Research Project are available from the Architecture Honors Committee.

The Honors thesis involves original work by each student under the

direction of a thesis committee, which shall include a thesis director, a faculty member in the Department of Architecture. The director chairs the thesis committee to be comprised of two other members, typically, a departmental faculty member and a non-departmental faculty member. In rare cases when the thesis director, in consultation with the Department Honors Committee and the student, determines that a non-departmental faculty member with expertise appropriate to the thesis in question cannot be identified on campus, an extra-disciplinary member from within the Department of Architecture (e.g., faculty in architectural history, technology, or other allied field) may fill the position of the non-departmental member. Any such exceptions to the standard membership of a thesis committee should be infrequent, as the point of including non-departmental participation is to help ensure that a student's research is understandable and valid to an informed community outside of the disciplines of architecture. The determination should be based on the extent to which a student's thesis would have to be unproductively altered to meet the requirement for non-departmental participation on the thesis committee. Additional faculty, both departmental or non-departmental, as well as non-academic experts, may participate in any Honors thesis as non-committee members, if their director welcomes their involvement.

Students will complete and present a written prospectus for the Research Thesis no later than the Friday before spring break before the fall semester of the final year of study, (e.g. the semester prior to the thesis).

Students shall meet a schedule of interim requirements established by the thesis committee in consultation with the Architecture Honors Committee.

## Department of Architecture Honors Program Requirements

### The Distinguished Scholars Program

#### For Distinguished Scholars in the Bachelor of Architecture Program

	Hours
Completion of 44 credit hours of honors designated courses, to include a minimum of:	
University Core Honors Courses	12
Professional Core Honors Courses in Architecture (Architectural Technology and/or History of Architecture)	11
Honors Professional Electives, including Methods of Architectural Research colloquium	9
Honors Thesis Research Project	12

#### For Distinguished Scholars in the Bachelor of Science in Architectural Studies

Completion of 38 credit hours of honors designated courses, to include a minimum of:	
University Core Honors Courses	12
Professional Core Honors Courses in Architecture (Architectural Technology and/or History of Architecture)	8
Honors Professional Electives or upper level (3000+) university honors courses, including an approved research methods course.	12
Honors Thesis Research Project	6

### The Departmental Scholars Program

#### For Departmental Scholars in the Bachelor of Architecture Program

	Hours
Completion of 24 credit hours of honors designated courses, to include a minimum of:	
Upper level (3000+) University Honors Courses (Free Electives taken outside the School of Architecture)	6

Professional Core Honors Courses in Architecture (Architectural Technology and/or History of Architecture)	3
Honors Professional Electives, including approved an approved Methods of Architectural Research colloquium	3
Honors Thesis Project	12

**For Departmental Scholars in the Bachelor of Science in Architectural Studies**

Completion of 15 credit hours of honors designated courses, to include a minimum of:	
Honors Professional Electives and/or upper level (3000+) University Honors Courses, including approved methods of research course	6
Professional Core Honors Courses in Architecture (Architectural Technology and/or History of Architecture)	3
Honors Research Thesis	6

**Architecture Honors Program Committee**

The chair of the School of Architecture Honors Program, the head of the Department of Architecture, the Department of Architecture representative to the School of Architecture Honors Program Committee and one tenured or tenure-track Architecture faculty member comprise the Architecture Honors Program Committee. The committee serves to:

- Review courses for honors designation.
- Review nominations of eligible students to join the Architecture Honors Program.
- Serve as ambassadors for the Department and its Honors Program.
- Participate in recruiting efforts of the School of Architecture and the Honors College.

The committee shall meet at least once each semester, and at the discretion of the department head and the chair of the School Honors Program.

**Department of Landscape Architecture Honors Program**

Initially, a 28 composite ACT score and a 3.5 GPA in the first semester are required for admission to the University Honors Program. However, students who accomplish and maintain a 3.5 GPA in University of Arkansas course work may be offered an invitation from the School of Architecture Honors Committee to join the Honors Program.

An honors student in the Department of Landscape Architecture is required to take a total of 38 credit hours of honors courses within the University and Department for graduation. This course work is summarized as follows for the Distinguished Scholars Program:

	Hours
University Core or Electives at the Honors level	12
Landscape Architecture Professional Core at the Honors level, which may include design studio, construction laboratory, or history class	11
Professional Electives, as identified with the Professional Core, at the Honors level, which may include coursework within the Landscape Architecture Department or from other University department programs.	9
Honors Thesis or project as described below	6

**Honors Program in the Department of Landscape Architecture**

An honors student in the Department of Landscape Architecture is required to take a minimum total of 18 credit hours of honors courses within the University and Department for graduation. This course work is summarized as

follows for the Departmental Scholars Program:

Landscape Architecture Professional Core at the Honors level, which may include design studio, construction laboratory, or history class; Professional Electives, as identified with the Professional Core, at the Honors level, which may include coursework within the Landscape Architecture Department or from other University department programs.	12
Honors Thesis or project as described above	6

Each Honors student shall have a department faculty adviser who will consult with the student throughout the university experience. The adviser will meet with the student a minimum of two times every fall and spring semester and correspond at least once during the summer. These sessions are venues for students to discuss their academic progress, course work, community service activities, and leadership development opportunities.

Honors courses within the Professional Core may be fulfilled through independent study or additional course work within the History of Landscape Architecture, Contemporary Landscape Architecture, Construction III, and Construction IV.

The student may also select honors work within Design Studio VI or VII. Additional work may include in-depth precedent research and design applications, and increased design resolution and details, as determined by the studio instructor. In addition, a student may choose an independent studio with mutual faculty agreement. This studio option is in addition to the required studios in the professional program and would only be available during the spring or summer semester of the fourth or fifth year.

An Honors student will be required to fulfill 6 credit hours of a written academic thesis or thesis design project. For the written thesis option, the student shall take a 3-credit-hour professional elective directly related to the thesis topic, and 3 credit hours of Special Projects with student's thesis adviser or other faculty designee. For the studio thesis option, the student shall take an honors-level 3-credit-hour Senior Project Preparation course, and an honors-level, 3-credit-hour Special Topics in Design Research in the same semester. The Design Studio VIII will not be offered at the honors level. All landscape architecture students in the professional program are required to complete a Senior Demonstration Project. Honors students pursuing the design thesis option are expected to integrate significant research within the design. Landscape Architecture Study students will be required to take two Special Topics in Design Research as partial fulfillment of the 6-credit thesis requirement. The last requirement will be a presentation and defense of the work to a jury from the department and other relevant academic advisers. All Honors students are highly encouraged to take a research methods course within the subject or topic area, scheduled prior to thesis work.

**ACCREDITATIONS**

The architecture program was founded in 1946 and has been accredited by the National Architectural Accrediting Board (NAAB) since 1958. The landscape architecture program was established in 1975 and has been accredited by the Landscape Architecture Accreditation Board (LAAB) of the American Society of Landscape Architects (ASLA) since 1983. The School holds memberships in the Association of Collegiate Schools of Architecture (ACSA) and the Council of Educators in Landscape Architecture (CELA), organizations comprised of North American schools of architecture and landscape architecture.

In the United States, most state registration boards require a degree from an accredited professional degree program as prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture,

recognizes three types of degrees: the Bachelor of Architecture, the Masters of Architecture and the Doctor of Architecture. A program may be granted a six-year, three-year, or two-year term of accreditation, depending on the extent of its conformance with established educational standards.

Master's degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

The Landscape Architecture Accreditation Board (LAAB) is the sole agency authorized to accredit U.S. professional degree programs in Landscape Architecture. LAAB recognizes the Bachelor of Landscape Architecture, Bachelor of Science in Landscape Architecture, and Masters of Landscape Architecture. It accredits each program every five years, evaluating degree of conformance with established education standards.

Masters degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree, which, when earned sequentially, comprise an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

## DEPARTMENTAL MAJORS

### ARCHITECTURE (ARCH)

Departmental Office  
120 Vol Walker Hall  
479-575-4945

- University Professor Emeriti Smart
- Professors Blackwell, Goodstein-Murphree, Luoni, Shannon, Vitale, Wall
- Associate Professors de Noble, Herman, Sexton, Terry
- Assistant Professors Hughes, Messadi
- Clinical Assistant Professors Fitzpatrick, Rotolo, Sarpaneva
- Adjunct Assistant Professors Bedeschi, Del Gesso, Rudzinski

### Bachelor of Architecture Degree

Bachelor of Architecture Degree	Hours
1. Completion of the following 92-hour professional program:	92
Architectural Design ARCH 1014, ARCH 1024, ARCH 2016, ARCH 2026, ARCH 3016, ARCH 3026, ARCH 4016, ARCH 4026, ARCH 5016, ARCH 5026	56
Architectural Technology ARCH 2114, ARCH 2124, ARCH 3134, ARCH 4154	16
History and Theory of Arch. ARCH 1212, ARCH 1222, ARCH 2233, ARCH 2243, ARCH 4433, ARCH 4523	16
Professional Practice ARCH 5314	4
2. Completion of the 35-hour general University Core as listed on page 40. In addition, specific requirements are listed below:	
Mathematics	3
MATH 2043 or MATH 2053	

Laboratory Science 8  
PHYS 1044 or PHYS 2013/2011L, required.  
PHYS 1054 or PHYS 2033/2031L, strongly recommended.

3. Completion of 27 hours of electives, as follows:  
Professional Electives 15

Chosen from upper-level courses (courses numbered 3000 or above) taught on the Fayetteville campus in the School of Architecture and allied disciplines.

Students participating in the Rome program may present only three hours of elective course work for professional elective credit. All other elective courses will be used to fulfill free elective requirements.

Free Electives 15

4. A minimum of 157 hours with a 2.00 cumulative grade-point average at this institution both in all work attempted and in all professional course work attempted is required. See Academic Policies.

5. Completion of the University Advanced Composition requirement either by course work or exemption by exam.

6. Participation for at least one semester in an approved international educational experience. (See Off-Campus Study Requirement, page 105.)

NOTE: No more than three hours of physical education and/or R.O.T.C. may be counted toward a degree. Courses not acceptable toward degree credit include those of a remedial or orientation nature and whose content are considered to be measurably duplicated elsewhere in the curriculum. ENGL 2003 is not counted toward degree credit, nor is ARCH 1003 for Architecture majors.

By following the preceding curriculum, students will meet the state-mandated University Core Requirements. They must also meet all other University requirements for graduation (page 40). Transfer students are required to present a minimum of one semester of physics (with laboratories) and a strongly recommended second course in physics as fulfillment of the science requirement in the State Minimum Core. See University Core Requirements, page 40. Physics is preparatory to architectural technology courses; students presenting a different science option may have difficulty in the architectural technology courses.

Sample curriculum for the Bachelor of Architecture degree can be obtained from the School's Advising Center.

### Professional Licensure Degree Requirement

The National Architectural Accrediting Board (NAAB) only accredits professional programs offering the Bachelor of Architecture, which requires a minimum of five years of study, and the Master of Architecture degrees. These professional degrees are structured to educate those who aspire to registration and licensure to practice as architects. The curricular requirements for awarding these degrees must include three components — general studies, professional studies, and electives. Together these three components comprise a liberal education in architecture and ensure that graduates will be technically competent, critical thinkers who are capable of defining multiple career paths within a changing societal context.

While no four-year degrees are accredited by NAAB, the Bachelor of Science in Architectural Studies degree is excellent for those who want a foundation in the field of architecture as preparation for either continued education in a professional degree program or for employment in fields related to architecture.

### Major Concentration in the History of Architecture and Urbanism

The major concentration (not considered an official minor) in the His-



tory of Architecture and Urbanism requires at least 33 semester hours and must include the following:

1. Completion of requirements for admission to the professional program in architecture, including ARCH 2233, ARCH 2243, ARCH 4433 and ARCH 4523, and presentation of a 3.25 grade-point average.
2. At least nine hours of professional electives in the history and theory of architecture and urbanism. Sample courses in this specialization include the following:
  - American Architecture and Urbanism** – select from  
 ARCH 4483 Architecture of the Americas  
 ARCH 5933 Preservation & Restoration  
 ARCH 4023 City in American Art and Culture  
 ARCH 4023 House Culture  
 LARC 3413 History of Landscape Architecture  
 LARC 4413 Contemporary Landscape Architecture  
 Students declaring a specialization in American Architecture may develop an emphasis in Historic Preservation; ARCH 5933 is required for the emphasis.
  - Early Modern (Renaissance and Baroque) Italy** – select from  
 ARCH 4023 Italian Arch. from the Renaissance to the Present  
 ARCH 5493 History of Urban Form  
 ARCH 4023 St. Peter's Basilica  
 ARCH 4023 Art and Culture in the City  
 ARCH 4023 Architecture of the City, Rome  
 LARC 3413 History of Landscape Architecture
  - Modern Architecture and Urbanism** – select from  
 ARCH 4483 Architecture of the Americas  
 ARCH 4023 City in American Art and Culture  
 ARCH 4023 House Culture  
 ARCH 4023 Italian Architecture from the Renaissance to the Present  
 ARCH 4023 Architecture of the City, Rome  
 LARC 4413 Contemporary Landscape Architecture
3. Three hours, Methods of Architectural Research Colloquium
4. At least twelve hours of free electives to be selected from the following areas, to include:
  - a. At least three hours in upper-level (3000+) art history courses related to the area of specialization.
  - b. At least three hours in upper-level (3000+) humanities or social science courses related to the area of specialization; students pursuing the historic preservation emphasis must select ANTH 5023 or ANTH 5443.
  - c. Foreign Language requirements to be determined in consultation with adviser. Students who intend to pursue graduate study in architectural history should have competency in at least one foreign language; French and/or German are recommended.
5. At least six to 12 hours of research thesis.
6. Students considering pursuing the major concentration in History of Architecture and Urbanism are encouraged to fulfill the humanities and social science requirements of the 35-hour University Core with selections from the following courses.
  - ARHS 1003 Art Lecture
  - WLIT 1113 World Literature I
  - WLIT 1123 World Literature II
  - CLST 1003 Intro. to Classical Studies, Greece
  - CLST 1013 Intro. to Classical Studies, Rome
  - HIST 1003 Institutions and Ideas of Western Civilization I
  - HIST 1013 Institutions and Ideas of Western Civilization II

- HIST 2003 History of the American People to 1877
- HIST 2013 History of the American People 1877 to the Present
- ANTH 1023 Intro. to Cultural Anthropology
- Any foreign language, 2003 or 2013.

**Minor Concentration in the History of Architecture and Urbanism**

The minor concentration in the History of Architecture and Urbanism (not considered an official minor) requires at least 18 semester hours and must include the following:

1. Completion of requirements for admission to the professional program in architecture, including ARCH 2233, ARCH 2243, ARCH 4433, and ARCH 4523.
  2. At least nine hours of professional electives in any area of architectural and urban history.
  3. Three hours, Methods of Architectural Research Colloquium
  4. At least six hours in humanities and/or social science courses related to the minor concentration.
  5. The research thesis is optional for students in the minor.
  6. See Major Concentration list above.
- SEE PAGE 316 FOR ARCHITECTURE (ARCH) COURSES

**Bachelor of Science in Architectural Studies**

The Bachelor of Science in Architectural Studies incorporates course work from the School of Architecture with liberal studies for students with interests that fall outside the parameters of the accredited professional degree program. The architectural studies program provides opportunities for students who wish to prepare for graduate study in an accredited architecture program or in an allied discipline, such as architectural history, historic preservation, urban planning, or construction management, as well as serving students who seek opportunities in related fields that may not require the five-year accredited degree.

**Requirements for a Bachelor of Science Degree in Architectural Studies:**

	<b>Hours</b>
1. Completion of the following 35-hour architectural studies program:	
Architectural Design	14
ARCH 1014, ARCH 1024, ARCH 2016	
Architectural Technology	8
ARCH 2114, ARCH 2124, or LARC 2714, LARC 3724	
History and Theory of Arch.	13
ARCH 1212, ARCH 1222, ARCH 2233, ARCH 2243, ARCH 4433 (Students interested in Landscape Architecture may substitute LARC 3413 for ARCH 2233 or ARCH 2243.)	
2. Completion of the following 35-hour general education program:	
English Composition	6
ENGL 1013, ENGL 1023	
American History or Government.	3
HIST 2003 or HIST 2013 or PLSC 2003	
Mathematics	3
MATH 2043 or MATH 2053	
Laboratory Science	8
PHYS 1044 and PHYS 1054 are recommended.	

- Fine Arts/Humanities 6  
One course must be elected from the fine arts core; one course from the humanities must be selected from PHIL 2003, PHIL 2103, PHIL 2203, or PHIL 3103. (See University Core Requirements on page 40)
- Social Science 9  
At least three hours should be taken in anthropology, economics, psychology, or sociology; and with not more than two courses taken from any one department to fulfill this requirement. (See University Core Requirements)
- 3. Completion of the following 21-hour basic program in the arts:
  - Communications 3  
COMM 1313
  - Humanities and Social Sciences 12  
HIST 1003 and HIST 1013, or  
HIST 1113 and HIST 1123  
WLIT 1113 and 3 hours from  
WLIT 1123; a foreign language literature course;  
CLST 1003; or CLST 1013. (CLST 1003 or CLST 1013 are recommended for architectural studies students.)
  - Arts and Sciences 6  
A minimum of six hours in courses numbered above 3000 (not including any courses cross-listed with architecture).
- 4. Completion of the following foreign language requirement. 0-12  
Foreign Language (depending upon placement)  
Students must demonstrate proficiency in a single modern or classic language other than English, usually by completing a sequence of four courses (1003, 1013, 2003, 2013). Students meeting the normal admission standard (two years of one foreign language in high school) may expect to satisfy this requirement with fewer courses, depending upon placement.
- 5. Completion of 21 hours of electives: 12  
Professional electives  
At least 6 hours in upper-level (3000 or above) courses taught in the School of Architecture. The remaining professional elective credits may be additional upper-level courses in the School of Architecture, approved courses in an allied discipline, or courses in another department of the University that contribute to the fulfillment of a recognized minor.  
Free electives 9
- 6. A minimum of 124 hours with a 2.00 cumulative grade-point average at this institution both in all work attempted and in course work completed in the School of Architecture.
- 7. Presentation of at least 40 semester hours in courses numbered 3000 or above or courses in the School of Architecture numbered 2000 with specific course prerequisites.
- 8. Completion of the University Advanced Composition requirement, either by course work or exemption by exam.
- 9. Each student graduating in Architectural Studies must write a research/analytical paper in at least one upper-division course in her or his major or minor area.
- 10. Course work taken to remove course deficiencies assigned during admission or transfer will not be counted toward the degree. Similarly, courses considered to be remedial or developmental will not count toward the degree

11. Unless exceptions are granted at the time of admission to the University of Arkansas, transfer work in which grades of “D” or “F” were earned will not be allowed toward credit for graduation. See the Admission chapter in this catalog for more information.

**Architectural Studies Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. During the first year, students who have been admitted to the Fall-Spring Design Studio and students who have been to the Spring-Summer Design Studio follow different schedules, both of which are listed below, with the Fall-Spring Studio first and then the Spring-Summer Studio. The second, third and fourth years are identical for both studios.

**Fall-Spring Design Studio**

Fall Semester Year 1	
4	ARCH 1014 Design I
2	ARCH 1212 Design Methods I
3	ENGL 1013 Composition I
3	HIST 2003 or 2013 American History or PLSC 2003 American Government
4	PHYS 1044 Physics for Architects I
1	ARCH Leadership by Design
17	Semester hours
Spring Semester Year 1	
4	ARCH 1024 Design II
2	ARCH 1222 Intro to Environmental Design II
3	ENGL 1023 Composition II
3	MATH 2043 Survey of Calculus or MATH 2053 Finite Mathematics Science Core; Recommended: PHYS 1054 Physics for Architects II
1	ARCH Leadership by Design
17	Semester hours

**Spring-Summer Design Studio**

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	HIST 2003 or 2013 American History or PLSC 2003 American Government
4	PHYS 1044 Physics for Architects I
3	Social Science Core
1	ARCH Leadership by Design
14	Semester hours
Spring Semester Year 1	
4	ARCH 1014 Design I
2	ARCH 1212 Design Methods I
3	ENGL 1023 Composition II
3	MATH 2043 Survey of Calculus or MATH 2053, Finite Mathematics Science Core ; Recommended: PHYS 1054 Physics for Architects II
1	ARCH Leadership by Design
17	Semester hours
Summer Session Year 1	
4	ARCH 1024 Design II
2	ARCH 1222 Design Methods II
6	Semester hours

**Prior to Second Year**

PHYS 1044, PHYS 1054 (or an approved alternate laboratory science in the University Core) and MATH 2043 or MATH 2053 must be completed before students can begin second-year courses in Architecture. Transfers students and change-of-majors seeking exceptions to the sample curriculum will be reviewed on an individual basis.

Fall Semester Year 2	
6	ARCH 2016 Architectural Design III
3	ARCH 2233 History of Architecture I
4	ARCH 2114 Architectural Technology I
3	Social Science Core
16	Semester hours
Spring Semester Year 2	
3	ARCH 2243 History of Architecture II
4	ARCH 2124 Architecture Technology II
3	COMM 1313 Fundamentals of Communication
3	Fine Arts/Humanities Core
3	Social Science Core
16	Semester hours
Fall Semester Year 3	
3	ARCH 4433 History of Architecture III
3	HIST 1003 Institutions and Ideas of Western Civilization I or HIST 1113 World Civilization I
3	WLIT 1113 World Literature I
3	Foreign Language
12	Semester hours
Spring Semester Year 3	
3	Fine Arts/Humanities Core
3	HIST 1013 Institutions and Ideas of Western Civilization II or HIST 1123 World Civilization II
3	WLIT 1123 World Literature II; CLST 1003 Intro to Classical Studies: Greece; or CLST 1013 Intro to Classical Studies: Rome
3	Foreign Language
3	Free Elective
15	Semester hours
Fall Semester Year 4	
3	Foreign Language
3	Upper-level Arts/Science Elective
3	Free Elective
3	Professional Elective
3	Professional Elective
15	Semester hours
Spring Semester Year 4	
3	Upper-level Arts/Science Elective
3	Foreign Language
3	Free Elective
3	Professional Elective
3	Professional Elective
15	Semester hours
124	Total hours

Architectural Studies degree candidates may pursue an academic minor. The minor must be in a field other than the major area, and students must notify the department of their intention to minor. An academic minor ordinarily consists of 15-18 hours. Although students in architectural studies may choose from any recognized minor offered by the University, they are encouraged to consider the following fields:

African-American Studies	Environmental Studies
Anthropology	European Studies
Art	Gender Studies
Art History	Geography
Business Administration	History
History	Historic Preservation
Communication	Latin-American Studies
Computer Sciences	Philosophy
Drama	Psychology

Economics  
English

Political Science  
Sociology

Although foreign study is not required of candidates for the four-year degree, students in the architectural studies curriculum are encouraged to participate in the School of Architecture's off-campus study programs in Rome and Mexico City. Architectural studies majors also may take advantage of the community service opportunities offered through the University of Arkansas Community Design Center (UACDC).

To take maximum advantage of the opportunities the four-year degree offers for pre-professional development (cultivation of specialization in and related to the field, and/or preparation for graduate study) each candidate for the Architectural Studies degree will work with a faculty adviser to develop a program of study emphasizing a student's special interests.

A sample curriculum for the Bachelor of Science in Architectural Studies degree can also be obtained from the School's Advising Center.

### LANDSCAPE ARCHITECTURE (LARC)

Departmental Office  
231 Memorial Hall  
479-575-4907

- Professor Crone
- Associate Professors Beatty, Boyer, Brittenum
- Assistant Professor Smith

### Bachelor of Landscape Architecture Degree

Bachelor of Landscape Architecture Degree	Hours
1. Completion of the following 95-hour Professional core:	
Design and Graphics LARC 1315, LARC 1325, LARC 2113, LARC 2123, LARC 2336, LARC 2346, LARC 3356, LARC 3914, LARC 3366 LARC 4376, LARC 4383, LARC 5386	59
Landscape Architecture/ History/Theory LARC 1211, LARC 1221, LARC 3413, LARC 4413	8
Summer Study Abroad LARC 3821, LARC 3933, LARC 4123	7
Landscape Architecture Technical Courses LARC 2714, LARC 3724, LARC 3734, LARC 4714, HORT 3103	19
Professional Practice LARC 5613	3
2. Completion of the 35-hour University Core as listed on page 40. As part of the University Core, the department recommends the following:	
Laboratory Science BIOL 1543/1541L or BIOL 1613/1611L and GEOL 1113/1111L are recommended.	8
3. Completion of the following additional general education requirements:	
Professional Electives	15
Students may select courses from the Departments of Landscape Architecture and Architecture as well as courses in history, geography, horticulture, art, sociology, environmental studies, and business. These courses can be thematically selected to emphasize urban studies, ecological planning, construction management, and land development.	

Free Electives 12

Students are encouraged to take courses outside the Department to broaden their education.

4. Candidates seeking graduation shall achieve a minimum of 157 hours and a minimum of a “C-” in each course within the professional curriculum. The remaining balance of hours shall have a minimum of 2.00 cumulative grade point average.

Any student receiving a “D+/-” or below in the professional core shall repeat the course. Any student with a second “D+/-” or below shall be considered for non-continuance in the program as determined by the department head and faculty.

To continue in the professional program, the student must submit a portfolio after their second year for faculty review. Please see section “Admission to the Professional Program in Landscape Architecture.”

5. Students in landscape architecture are required to complete the department’s summer study abroad program, after their third year.

NOTE: No more than four hours of physical education and/or R.O.T.C. may be counted toward a degree. Courses not acceptable toward degree credit include those of a remedial or orientation nature and whose content are considered to be measurably duplicated elsewhere in the School’s curriculum. ENGL 2003 is not counted toward degree credit nor is LARC 1003 for BLA majors.

By following the preceding curriculum, students will meet the state-mandated University Core Requirements. They must also meet all other University Requirements for graduation (page 40). We strongly recommend that transfer students present eight hours of laboratory science courses selected from botany, biology, geology, and physical science as part of the State Minimum Core.

### Professional Licensure Degree Requirement

The School’s BLA program is accredited by LAAB, which requires that specific criteria be met in a professional program. This five-year professional program gives its graduates the required prerequisite degree to qualify to take the licensing exam and prepares them for practice.

Forty-nine states require licensure for landscape architects. The primary purpose of this licensure is to “protect the health, safety, and welfare of the public.” Most states require that candidates possess an accredited degree in landscape architecture and complete a period of professional experience, working with a licensed landscape architect. Once these requirements are complete, candidates must pass a national, uniform exam, sometimes with additional sections unique to that state. Sample curriculum for the Bachelor of Landscape Architecture degree can be obtained from the School of Architecture Advising Center.

### Bachelor of Science in Landscape Architectural Studies

The Bachelor of Science in Landscape Architectural Studies program focuses either on landscape architecture studies or on environmental design issues, which serve students who wish to pursue a career in the profession of landscape architecture but do not seek licensure. The program utilizes existing professional courses within the Departments of Landscape Architecture, Architecture and the University to fulfill the required course work. The total number of hours of credit required for graduation is 124.

This degree program opens the opportunity to more individuals who have interests that can further the body of knowledge within the profession. For example, specialist areas are growing in the sub-fields of cultural landscape preservation and documentation, critical analysis of built works, contemporary case-study development, and urban planning and design. This program prepares students for work in private-sector landscape architecture and planning offices, public policy and administration departments, and the

not-for-profit sector. Students will be prepared for graduate school and can pursue professional degrees in landscape architecture, urban planning and design, business, and law, and graduate degrees in historic landscape preservation, history, public policy, public administration, and journalism.

### Requirements for a Bachelor of Science in Landscape Architectural Studies

	<b>Hours</b>
1. Completion of the following 35-hour landscape architecture studies program:	
Landscape Architecture Design LARC 1315, LARC 1325, LARC 3914, LARC 2113, LARC 2123	18
Landscape Architecture Technology LARC 2714 or LARC 4743 or LARC 3724	4
History and Theory of Landscape Architecture	6
Research thesis preparation LARC 302V	2
2. Completion of the following 27-hour basic program in the arts:	
Communications COMM 1313	3
Humanities and Social Sciences HIST 1003 and HIST 1013 or HIST 1113 and HIST 1123, WLIT 1113 and 3 hours from WLIT 1123 or a foreign language literature course, CLST 1003 or CLST 1013	12
Arts and Sciences A minimum of twelve (12) hours in courses numbered above 3000 (not including any courses cross-listed in the School of Architecture.	12
3. Completion of the following foreign language requirement	
Foreign Language	0-6
Depending on placement, students must be introduced to a single modern or classic language other than English by completing two courses (1003 and 1013 or 2003 and 2013). Students with two years or more in one foreign language in high school may satisfy this requirement with higher-level course work	
4. Completion of 21 hours of electives	
Professional Electives	15
Credits may be from upper-level (3000 or above) courses from the departments of landscape architecture and architecture, sociology, geography, horticulture or other approved courses in an allied discipline or other courses that contribute to the fulfillment of a recognized minor.	
Free Electives	9
5. University Core	35

A minimum of 124 hours with a 2.00 cumulative grade-point average at this institution both in all work attempted and in course work completed in the Department of Landscape Architecture and the School of Architecture.

Presentation of at least 40 semesters in courses numbered 3000 or above or courses in the School of Architecture numbered 2000 with specific course prerequisites.

Completion of the University Advanced Composition requirement, either by course work or exemption by exam.

Each student graduating in Landscape Architectural Studies must write a research/analytical paper in at least one upper division course in his or her major or minor areas. Prior to or in association with developing this paper, the student must select a faculty from the Department of Landscape Architecture from whom to take a Special Studies one-credit preparation and review course.

Course work taken to remove course deficiencies assigned during admission or transfer will not be counted toward the degree. Similarly, courses considered to be remedial or developmental will not count toward the degree.

Transfer work in which grades of “D” or “F” were earned will not be allowed toward credit for graduation.

**Landscape Architecture Studies Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan while pursuing a Bachelor of Science in Landscape Architectural Studies should see page 42 in the Academic Regulations chapter for university requirements of the program.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	MATH 1203 College Algebra
3	HIST 2003 or 2013, PLSC 2003 American History or Government
1	LARC 1211 Intro to Landscape Architecture Design I
5	LARC 1315 Landscape Architecture Design I
1	Some students may be required to take FYE
15-16	Semester hours
Spring Semester Year 1	
3	ENGL 1023 Composition II
3	SOCI 2013 General Sociology
4	GEOL 1113/1111L General Geology and lab
1	LARC 1221 Intro to Landscape Architecture I
5	LARC 1325 Landscape Architecture Design II
16	Semester hours
Fall Semester Year 2	
3	WLIT 1113 World Literature I
3	LARC 3413 History of Landscape Architecture
3	Fine Arts Core Requirement
3	LARC 2113 Design Communications I
3	Free Elective Hours
1	LARC 302V (one credit: thesis prep)
15	Semester hours
Spring Semester Year 2	
3	COMM 1313 Fundamentals of Communication
4	BIOL 1613/1611L or BIOL 1543/1541L
3	LARC 2123 Design Communications II
3	LARC 4413 Contemporary Landscape Architecture
3	Arts and Sciences 3000+ level course
16	Semester hours
Fall Semester Year 3	
3	Humanities Core Requirement
3	HIST 1003 or HIST 1113
4	LARC 3914 Planting Design I
3	Foreign Language 1003 Requirement
3	Arts and Sciences 3000+ level course
16	Semester hours

Spring Semester Year 3	
3	LARC 1003 The American Landscape
3	HIST 1013 or HIST 1123
3	Foreign Language 1013 Requirement
3	Arts and Sciences 3000+ level course
3	Social Science Core Requirement
15	Semester hours
Fall Semester Year 4	
3	WLIT 1123 or Foreign Language Literature Course
3	Free Elective
3	Professional Elective
3	Professional Elective
3	Arts and Sciences 3000+ level course
15	Semester hours
Spring Semester Year 4	
3	Professional Elective
3	Professional Elective
3	Free Elective
3	Social Science Core Requirement
4	LARC Construction Requirement
16	Semester hours
124	Total hours

Landscape Architectural Studies candidates may pursue an academic minor. The minor must be in a field other than the major area, and the students must notify the department of their intention to minor. An academic minor ordinarily consists of 15-18 hours, which are dictated by the department of the minor. Students in Landscape Architectural Studies may choose from any recognized minor offered by the University; however, they are encouraged to consider the following fields:

Public Policy, History, Geography, and Horticulture, and further encouraged to consider cross-disciplinary study in African-American Studies, Anthropology, Art, Art History, Business Administration, Classical Studies, Communication, Computer Sciences, Economics, English, European Studies, Gender Studies, Latin-American Studies, Philosophy, Political Science, Psychology and Sociology.

Although foreign study is not required for candidates in Landscape Architectural Studies, students in the curriculum are encouraged to participate in the School of Architecture’s off-campus study programs in Rome and Mexico City. Community planning projects are offered through the University of Arkansas Community Design Center (UACDC).

To take maximum advantage of the opportunities of the four-year degree program, each student in the Landscape Architectural Studies program shall work with the department head to develop a program of study emphasizing special interests, to cultivate a specialization related to the field, and to guide preparation for graduate study, if desired.

SEE PAGE 363 FOR LANDSCAPE ARCHITECTURE (LARC) COURSES

# J. William Fulbright College of Arts and Sciences

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## Office of the Dean of the College

525 Old Main, 479-575-4804

### Interim Dean

William A. Schwab

### Associate Deans

Charles H. Adams, Jeannine M. Durdik

### Assistant Deans

Adam K. Motherwell, Lisa J. Summerford

## Office of Student Affairs

525 Old Main, 479-575-4801

### Advising Center

Dave D. Dawson, Director

518 Old Main, 479-575-3307

### Honors Studies

Sidney J. Burris, Director

517 Old Main, 479-575-2509

### World Wide Web:

<http://fulbright.uark.edu/>

E-mail: [arscinfo@uark.edu](mailto:arscinfo@uark.edu)

The college has adopted as its mission the following statement from Fulbright's writings:

*... the highest function of higher education is the teaching of things in perspective, toward the purposes of enriching the life of the individual, cultivating the free and inquiring mind, and advancing the effort to bring reason, justice, and humanity into the relations of men and nations.*

Consisting of 19 departments and numerous centers and research units, Fulbright College has a twofold mission: to provide a broad, liberal education to all students within the University community and to furnish specialized knowledge at the upper division and graduate levels leading to a professional career. The general education curriculum within the college is designed to assure students' mastery of the English language, provide knowledge of the historical, social, intellectual, and linguistic bases of human culture, provide habits of thought useful in later life, encourage the development of aesthetic, political, and ethical values, and offer the necessary foundation for professional competence or further training in professional or graduate schools. The general education curriculum of the college is based on the Platonic assumption that the pursuit of knowledge is an intrinsically good activity and that it is incumbent upon all members of an enlightened society to engage in that pursuit.

Recognizing that its students must become productive members of contemporary American society, Fulbright College offers undergraduate majors in fields ranging from chemistry and art to journalism, physics, social work and psychology. In addition, the college, in cooperation with the Graduate School, offers course work leading to master's degrees and doctoral degrees. As a natural corollary of their instructional role, faculty members of the college pursue active research programs that enable them simultaneously to provide state-of-the-art education to their students and bring national and international recognition to the University.

In sum, Fulbright College lies at the very heart of the University. The seat of liberal learning within the institution and the state, it is committed to providing excellent general education to all members of the student body and specialized instruction of the highest quality to its own majors.

## MISSION AND OBJECTIVES

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Few in 20th century America did more to advance the study of international relations or promote human understanding than J. William Fulbright. Committed to the idea that a free society and a peaceful world require, above all, an educated citizenry, he urged with unflagging energy the use of historical perspective, cultural relativity, and scientific objectivity in the study of human affairs. Senator Fulbright, like Thomas Jefferson, Andrew Jackson, and Abraham Lincoln before him, was committed to the belief that an educated, enlightened electorate will act not only in its own self-interest but also in the interest of all the people of the world.

In recognition of J. William Fulbright's contribution to the cause of liberal education and of his many services to his native state, the Board of Trustees of the University of Arkansas on November 20, 1981, resolved...

*The College of Arts and Sciences at the University of Arkansas, Fayetteville, shall be named, henceforth, the J. WILLIAM FULBRIGHT COLLEGE OF ARTS AND SCIENCES. His name will imbue that college, and the University, with his reputation and image for a devoted interest in higher education and its accomplishments through its scholars as reflected in its students.*

## FACILITIES AND RESOURCES

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### Academic Advising Services

The Fulbright College of Arts and Sciences provides an adviser for each student enrolled in the college. Freshman- and sophomore-level students are advised in the Fulbright College Advising Center in Old Main 518. All undeclared major students and all freshman declared major students doing a four-year honors program receive advising from the Fulbright Honors Program office in Old

Main 517. The faculty of each department within Fulbright College assumes responsibility for advising junior- and senior-level students who have declared majors in the department and those who have declared current interest in the department as a possible major area. Other advisory services exist to provide aid and direction to students who are non-degree candidates as well as those who are beginning work in the college without having yet decided on a major and those who are planning to attend professional schools such as those for medicine or pharmacy. Advisers in the Fulbright College Advising Center will assist students in program planning and will help them to become aware of and familiar with the academic offerings of the university. Students should consult their advisers on a regular basis, not limited to registration matters but including all areas of their academic careers. Personnel in the Fulbright College Advising Center or the Dean's office will direct students to the appropriate advising office.

Students should discuss with their advisers opportunities for individual variations as well as regular course requirements. Programs and facilities of particular interest to individuals may include the Honors Program, programs for advanced placement and credit by examination, study abroad and the services of the University Career Development Center.

The Career Development Center administers and interprets tests that measure individual ability, interest, and achievement, and thus may aid also in counseling students about the field of study in which they are most likely to be effective and successful.

For questions regarding advising, contact the Fulbright College Advising Center at 575-3307 or visit online at <http://fcac.uark.edu>.

## DEGREES OFFERED

*For a complete list of departmental majors, minors, concentrations, options and coursework, see the chart on pages 118 and 119.*

The J. William Fulbright College of Arts and Sciences offers four-year curricula leading to the degrees of Bachelor of Arts (B.A.), Bachelor of Science (B.S.), Bachelor of Fine Arts (B.F.A.), Bachelor of Music (B.M.), and Bachelor of Social Work (B.S.W.). Each candidate for the B.A. and B.S. degrees selects a major field for specialized study. In addition to usual departmental majors there are interdepartmental majors and special programs for students preparing for professional degrees in law, medicine, dentistry, and teaching.

## MAJORS AND MINORS

### Majors

American Studies	Geology
Anthropology	German
Art	History
Biology	International Relations
Chemistry	Journalism
Classical Studies	Mathematics
Communication	Music
Computer Science (B.A.)	Philosophy
Criminal Justice	Physics
Drama	Political Science
Earth Science	Psychology
Economics	Social Work
English	Sociology
French	Spanish
Geography	

### Second (or dependent) Majors\*

African American Studies  
 Asian Studies  
 European Studies  
 Latin American Studies  
 Middle East Studies  
 Russian Studies

\*A second (or dependent) major must be earned in a degree program in which the first major is one authorized to be given independently.

### Minors

Academic minors in approved degree programs are options available to students in the Fulbright College of Arts and Sciences. The minor must be in a field other than the major, and students must notify the department of their intention to minor. An academic minor ordinarily consists of 15-18 hours. Specific requirements for the minor are given in the section entitled Departments, Majors, and Minors. Minors may be chosen from the following fields:

African American Studies	German
Anthropology	Historic Preservation
Arabic	History
Art History	Japanese
Asian Studies	Latin American Studies
Biology	Legal Studies
Business	Mathematics
Chemistry	Medieval and Renaissance Studies
Classical Studies	Middle East Studies
Communication	Music
Computer Science	Philosophy
Drama	Physics
Economics	Political Science
English	Psychology
European Studies	Religious Studies
French	Social Work
Gender Studies	Sociology
Geography	Spanish
Geology	Statistics

Fulbright College also recognizes all official minors offered by sister colleges at the University of Arkansas. Students wishing to have such minors made a part of their transcript must notify the Fulbright College dean's office (MAIN 525) no later than when degree application is made.

## OTHER PROGRAMS

### Undergraduate Preparation for Professional Programs

The Fulbright College of Arts and Sciences offers courses that are required for the study of law, medicine, dentistry, teaching, pharmacy, social work, and other professions. It provides supporting programs in the humanities, fine arts, social sciences, and natural sciences for students who are enrolled for professional programs in other undergraduate colleges on the campus and for those students who may plan to enter postgraduate professional programs in other colleges.

In some instances it may be possible for a student to plan the use of undergraduate courses so that the time required for completion of a postgraduate professional program may be shortened by as much as one full year. Currently, this may be done for the Master of Social Work program. For information and advice concerning this program, see the Director of the School of Social Work.

In other pre-professional programs, the distribution of credits applied toward a degree in Fulbright College may require the consignment of a considerable portion of the available electives to prerequisite courses and to courses that are in direct support of the undergraduate major area.

Interested students should contact the appropriate advisers early in the planning of such programs.

Teacher Education Programs: Acceptance in a teacher education program is governed by regulations approved by the University Teacher Education Board for Initial Licensure and administered by the College of Education and Health Professions and the Fulbright College of Arts and Sciences. Students in Fulbright College can pursue teacher licensure in the following areas: Art, Drama/Speech, English, Foreign Languages, Mathematics, Music, Life/Earth Science, Physical/Earth Science, or Social Studies. Students in all subject areas, except Art and Music, must meet the entrance requirements for the Master of Arts in Teaching (M.A.T.) degree, which include completion of a baccalaureate degree in the subject area, completion of additional licensure requirements (if any) in subject area, completion of M.A.T. course requirements and a minimum 2.70 grade point average. See below for specific requirements in each subject area. Students intending to obtain teacher licensure in Art or Music will follow the education requirements set forth in the Bachelor of Fine Arts and Bachelor of Music degrees, respectively. For more information, please contact the Coordinator of Teacher Education in the College of Education and Health Professions, Peabody Hall, Room 8, and the Fulbright College Advising Center, Old Main, Room 518.

### Secondary Education Requirements for Fulbright College Students (except in Art and Music)

- All students must complete course requirements for entrance into the M.A.T. degree program. (All course requirements are subject to change. Students must meet current requirements at time of application for graduation.)

Licensure for teaching requires completion of the bachelor's degree in Fulbright College and completion of the Master of Arts in Teaching (M.A.T.) degree through the College of Education and Health Professions. Admission to the M.A.T. degree program requires a minimum cumulative undergraduate grade-point average of 2.70 and completion of the following requirements. Refer to the teacher licensure checklist at <http://coehp.uark.edu/4882.htm> for licensing requirements and additional information.

Complete the following with a grade of "C" or higher:

- CIED 4131 Practicum in Secondary Education
  - Demonstration of computer competencies in a portfolio or:
    - ETEC 2001 Educational Technology and
    - ETEC 2002L Educational Technology Lab or another appropriately approved course
  - CIED 4023 Teaching in Inclusive Secondary Settings
- Complete subject area requirements. (See below for specific subject area requirements.)

#### Drama/Speech

Complete a BA degree with a major in Communications or Drama. Communication majors must take the following Drama courses:

- DRAM 1223 Introduction to Dramatic Art
- DRAM 1683 Acting I
- DRAM 2683 Acting II
- DRAM 1313/1311L Stage Technology I and lab
- DRAM 1323/1321L Stage Technology II and lab
- DRAM 3653 Directing I

Drama majors must take the following Communication courses:

- COMM 2373 Introduction to Debate

- COMM 4793 Directing Forensics
  - COMM 2351 Parliamentary Procedure
  - COMM 2303 Public Speaking
  - COMM 3303 Small-Group Communication
- Students are advised to obtain an additional licensure area.

#### English

Complete a B.A. degree with a major in English.  
Students are advised to obtain an additional licensure area.

#### Foreign Languages

Complete a BA degree in French, German or Spanish.  
Pass Oral Proficiency Examination in French, German, Russian, and Spanish equivalent to Mid-Intermediate Rating on the ACTFL/ETS test (taken at end of senior year).

#### Life/Earth Science

Complete a BA or BS degree with a major in biology.  
The following Earth Science courses are recommended for preparation of Praxis II content area:

- GEOL 1113/1111L
- GEOL 1133/1131L
- ASTR 2003/2001L

#### Mathematics

Complete a B.A. or B.S. in mathematics.

#### Physical/Earth Science

Complete a BA or BS degree with a major in chemistry or physics.  
The following Earth Science courses are recommended for preparation of Praxis II content area:

- GEOL 1113/1111L
- GEOL 1133/1131L
- ASTR 2003/2001L

#### Social Studies

Complete a BA degree in anthropology, economics, history, geography, political science, psychology, or sociology.

Complete these additional course requirements:

- ECON 2143 Basic Economics or any other 3 hour credit ECON course
  - HIST 4583 Arkansas in the Nation or HIST 3383 Arkansas and the Southwest
- Note: HIST 3383 can also be taken by correspondence through the Department of Independent Study, Division of Continuing Education, or it can be taken Web-based through the same office. Call them at (479) 575-3647 for further information if you are interested in the Web-based class.
- HIST 1003 Institutions and Ideas of Western Civilization I or HIST 1113 Institutions and Ideas of World Civilizations I
  - HIST 1013 Institutions and Ideas of Western Civilization II or HIST 1123 Institutions and Ideas of World Civilizations II
  - HIST 2003 History of the American People to 1877
  - HIST 2013 History of the American People, 1877 to Present
  - PLSC 2003 American National Government
  - SOCI 2013 General Sociology
  - GEOG 1123 Human Geography
- Two additional courses in U.S. history  
Two additional courses in world and/or regional history  
One additional course in political science  
Two courses in economics (ECON 2143 counts as one)  
One additional course in geography
- Students are advised to obtain an additional licensure area.

**Pre-Law Program:** While there is no prescribed pre-law curriculum, Fulbright College offers a minor in legal studies administered through the department of political science. Students considering a career in law may



MAJORS, MINORS, CONCENTRATIONS AND COURSEWORK IN FULBRIGHT COLLEGE							
Field of Study	Degrees Offered	Major	Minor	Concentration or Option	Coursework	Department	Page
Advertising and Public Relations				X		Journalism	170
African-American Studies	BA	X*	X			African-American Studies	129
American Studies	BA	X				American Studies	129
Anthropology	BA	X	X			Anthropology	131
Anthropology/Sociology	BA	X*				Interdisciplinary	132
Arabic			X			Foreign Languages	161
Art	BA or BFA	X				Art	133
Art Education				X		Art	136
Art History/Criticism				X		Art	134
Asian Studies		X*	X			Asian Studies	137
Astronomy					X	Physics	185
Biochemistry				X		Chemistry & Biochemistry	142
Biology	BA or BS	X	X			Biological Sciences	137
Biophysics				X		Physics	185
Broadcast				X		Journalism	170
Cartography/Remote Sensing/GIS specialization				X		Anthropology or Geosciences	162
Chemistry	BA or BS	X	X			Chemistry & Biochemistry	142
Classical Studies	BA	X	X			Classical Studies	147
Communication	BA	X	X			Communication	148
Computational Physics				X		Physics	185
Computer Science	BA	X	X			Computer Science	149
Creative Writing				X		English	154
Criminal Justice	BA	X				Sociology	197
Dance					X	Drama	150
Drama	BA	X	X			Drama	150
Earth Science	BS	X				Geosciences	162
Economics	BA	X	X			Economics	152
Electronics-Physics				X		Physics	185
English	BA	X	X			English	154
English/Journalism	BA	X*				Interdisciplinary	156
European Studies	BA	X*	X			European Studies	157
French	BA	X	X			Foreign Languages	158
Gender Studies	BA		X			Gender Studies	162
Geography	BA	X	X			Geosciences	162
Geology	BS	X	X			Geosciences	162
German	BA	X	X			Foreign Languages	159

MAJORS, MINORS, CONCENTRATIONS AND COURSEWORK IN FULBRIGHT COLLEGE (cont.)							
Field of Study	Degrees Offered	Major	Minor	Concentration or Option	Coursework	Department	Page
Historic Preservation			X			Geosciences	162
History	BA	X	X			History	166
International Economics and Business				X		Economics	152
International Relations	BA	X				International Relations	167
Japanese			X			Foreign Languages	161
Journalism	BA	X				Journalism	170
Journalism/Political Science		X*				Interdisciplinary	170
Journalism/English		X*				Interdisciplinary	156
Latin American Studies	BA	X*	X			Latin American Studies	173
Legal Studies			X			Political Science	190
Mathematical Sciences	BA or BS	X	X			Mathematical Sciences	174
Medieval and Renaissance Studies			X			Medieval Studies	178
Middle East Studies	BA	X*	X			Middle East Studies	178
Music	BA or BM	X	X			Music	179
Music Education				X		Music	179
Music Performance				X		Music	179
Music Theory or Composition				X		Music	179
News/Editorial				X		Journalism	170
Optics-Physics				X		Physics	185
Philosophy	BA	X	X			Philosophy	184
Physics	BA or BS	X	X			Physics	185
Political Science	BA	X	X			Political Science	190
Political Science/Journalism	BA	X*				Interdisciplinary	190
Professional Physics				X		Physics	185
Psychology	BA	X	X			Psychology	193
Regional Studies				X		American Studies	129
Religious Studies			X			Religious Studies	194
Russian Studies	BA	X*				Russian Studies	195
Social Work	BSW	X	X			Social Work	195
Sociology	BA	X	X			Sociology	197
Sociology/Anthropology	BA	X*				Interdisciplinary	197
Spanish	BA	X	X			Foreign Languages	160
Statistics			X	X		Mathematical Sciences	174
Studio Art				X		Art	133

\* Indicates majors that are "second," "dependent," or "combined." See each program for more details.

consult the *School of Law Catalog* or the Fulbright College Advising Center for information concerning certain categories of courses that may be helpful to the study and practice of law. Students uncertain about a major degree program should contact the Fulbright College Advising Center.

A baccalaureate degree is required for admission to the University of Arkansas School of Law, except for those students in the Fulbright College of Arts and Sciences who are admitted to the special six-year program referred to in the paragraph immediately following. All applicants for admission are required to take the Law School Admission Test. (See page 283.)

The University of Arkansas School of Law at Fayetteville and the Fulbright College of Arts and Sciences jointly administer a six-year program whereby highly qualified students may earn both the bachelor's degree and the Juris Doctor degree. Any student enrolled in the J. William Fulbright College of Arts and Sciences during a spring semester shall be permitted to matriculate in the School of Law in the following fall semester if the admission complies with Section 1 of Part A of the law school's admission policies and if the student meets the following conditions:

1. At least 30 consecutive hours of course work in Fulbright College,
2. At least 94 hours credited toward a bachelor's degree by Fulbright College,
3. Completion of Fulbright College's requirements for a major in connection with the bachelor's degree,
4. A cumulative grade-point average in all college or University course work of at least 3.50, without grade renewal,
5. An LSAT score of at least 159.

A student may substitute law school course work for the remaining total hours required for the bachelor's degree from Fulbright College. Formal application for the degree should be made to the Registrar. Information about the program may be obtained in the dean's office or the Fulbright Advising Center.

## Health Related Professions

### Pre-Professional Programs:

Chiropractic	Medical	Pharmacy
Dental	Optometry	Podiatry

### Allied Health Pre-Professional Programs:

Cytotechnology	Occupational Therapy
Dental Hygiene	Ophthalmic Medical Technology
Physical Therapy	Diagnostic Medical Sonography
Medical Technology	Radiologic Technology
Respiratory Care	Nuclear Medicine Technology

For additional information about these and other allied health professions, contact the Fulbright College Advising Center, 518 Old Main, 479-575-3307, or e-mail: [fcac@uark.edu](mailto:fcac@uark.edu), Web site: <http://fcac.uark.edu>. All pre-professional and allied health students are advised to research the school(s) where they intend to complete their professional or allied health program.

**General:** Each of the above areas involves the completion of a minimum number of semester hours and certain required courses. Many of the specific course requirements are common to all programs, and it is in the student's best interest to complete these requirements as early as possible. Careful scheduling is essential to ensure that courses are taken in proper sequence.

**Pre-Chiropractic Program:** Students entering this program should determine the specific admission requirements from the school(s) of their choice at an early date. Most chiropractic colleges require a minimum of 90 hours of college credit to include the following: 6 hours of English, 12 hours chemistry (with a minimum of 3 hours inorganic chemistry and at least 6 hours organic chemistry and/or biochemistry), 8 hours of biology, 3 hours of psychology, 15 hours of

social science or humanities, and 8 hours of physics.

All students planning careers in chiropractic should contact the Fulbright College Advising Center, 518 Old Main, 479-575-3307.

**Pre-Dental Program:** All dental schools require a minimum of three years of college work, and most schools give preference to applicants who have completed a baccalaureate degree. The minimum requirements for admission to most dental schools can be met at the University of Arkansas by completing the following courses:

- ENGL 1013, ENGL 1023 or equivalent composition course.
- BIOL 1543/1541L and at least 8 additional hours of biology (BIOL 1603/1601L is recommended)
- PHYS 2013/2011L, PHYS 2033/2031L,
- and CHEM 1103/1101L, CHEM 1123/1121L, CHEM 3603/3601L, CHEM 3613/3611L (CHEM 3813 Biochemistry is recommended or required by some schools).

CLEP and AP credit is not accepted. Dental schools have a variety of additional course requirements and pre-dental students should check each school's Web site.

Mathematics is not a general requirement, but students are expected to have a background equivalent to college algebra and trigonometry.

Students who complete a minimum of 90 hours of work may qualify for the combined degree program provided that they complete the requirements for graduation in Fulbright College of Arts and Sciences.

All dental schools require the Dental Admissions Test. It is suggested that applicants take the DAT one year prior to the time they plan to enter dental school. A student planning a career in dentistry should contact Dr. J.C. Rose, Department of Anthropology, 479-575-2508.

**Pre-Medical Program:** Medical schools in general require a minimum of 90 semester hours of college credit exclusive of military science and physical education, and most recommend that the student complete a baccalaureate degree. All medical schools have specific course requirements, and the student should determine those requirements for the school or schools of his or her choice. The minimum requirements for most medical schools can be met by completion of the following courses:

- ENGL 1013, ENGL 1023, or equivalent
- BIOL 1543/1541L, plus one other course in biological sciences, or equivalent
- CHEM 1103/1101L, CHEM 1123/1121L, CHEM 3603/3601L, CHEM 3613/3611L
- MATH 1203 and MATH 1213, or MATH 2554
- PHYS 2013/ 2011L and PHYS 2033/2031L, or PHYS 2054 and PHYS 2074.

CLEP credit is not accepted.

Additional courses are recommended. Special opportunities and experiences are available to pre-medical students through the Liebolt Endowment.

Pre-medical students are encouraged to complete the requirements for the B.A. or B.S. degree. As part of these requirements the student must choose a major, but the choice of a major has no direct bearing upon admission to medical school and should reflect the particular interests of the student. If a student is admitted to a medical school prior to completion of the baccalaureate degree requirements, he/she may wish to take advantage of the combined degree program in medical science. If that program is elected, the student should complete all of the basic University and college requirements for graduation during residence on the UA campus.

Most medical schools require the Medical College Admissions Test (MCAT), which is administered at several testing sites in Arkansas on specific dates from January to September each year. The MCAT normally should be taken in the spring preceding application to medical school. Admission to medical school is highly competitive, and a good grade-point average is demanded. A grade-point average of 3.30 is the minimum likely to receive favorable consideration. A

grade of “D” in any course required by the medical school is not considered satisfactory. Advising is available through Dr. Neil Allison, Department of Chemistry and Biochemistry, 479-575-5179, and Dr. Jeanne McLachlin, Department of Biological Sciences, 479-575-5348. Dr. Allison serves as chair of the University of Arkansas Pre-medical Advisory Committee. For information, visit the University of Arkansas pre-medical Web site at <http://premed.uark.edu>.

**Pre-Optometry Program:** Admission requirements to schools and colleges of optometry are not uniform. Typically they include courses in English, mathematics, physics, chemistry, and biology. Some colleges and schools have specific requirements in psychology, social sciences, literature, philosophy, and foreign languages. Students in this program should determine the specific requirements from the college(s) they wish to attend at an early date and plan their program of study accordingly. Details concerning the program are available from the Fulbright College Advising Center, 479-575-3307, 518 Old Main.

**Pre-Pharmacy Program:** Entrance requirements for pharmacy schools vary; therefore, students should research the schools of their choice to determine specific prerequisite course work.

The University of Arkansas for Medical Sciences College of Pharmacy requires 69 hours of pre-professional courses to include: 4 hours of calculus, 9 hours of English/Communication, 16 hours of chemistry, 12 hours of biology, 4 hours of physics, 3 hours of economics, 6 hours of critical thinking/problem solving, and 15 hours of humanities.

Students are advised to begin taking humanities electives during the second semester of their freshman year. Since pharmacy schools have many more applicants than they can accept, the student is urged to earn a grade-point average much higher than the minimum of 2.00.

Grades are a major consideration when admission committees evaluate a student's qualifications for acceptance. The University of Arkansas College of Pharmacy and other pharmacy schools also require applicants to take the Pharmacy College Admission Test (PCAT). This may be taken in November or February. The pre-pharmacy adviser for the University of Arkansas is Lorraine Brewer, Department of Chemistry and Biochemistry, 479-575-3103.

**Pre-Podiatry Program:** To meet entrance requirements for colleges of podiatry, an applicant must have completed a minimum of three years at an accredited undergraduate institution; however, most entering students have completed a baccalaureate degree. Courses required for admission vary with the college, and a student should inquire early in the academic program about the courses required for a particular institution. In general, a student is advised to include at least 8 hours of general chemistry, 8 hours of organic chemistry, 8 hours of physics, 8 hours of biology, and 6 hours of English. Additional information concerning requirements for specific colleges of podiatry may be obtained from the Fulbright College Advising Center, MAIN 518, 479-575-3307.

**Pre-Cytotechnology Program:** Students entering this program should determine the specific requirements from the school of their choice at an early date. Requirements for the University of Arkansas for Medical Sciences College of Health Related Professions program in cytotechnology include 20 hours of biology, 8 hours of chemistry, 3 hours of college algebra, 6 hours English composition, 6 hours of Western civilization, 3 hours in American history or national government, 3 hours in the humanities, 6 hours in the social sciences, 3 hours of communication, 3 hours fine arts, and 24 hours of electives for a total of 85 hours. At least 5 of these elective hours must be upper-level.

All students planning careers in cytotechnology should contact the Fulbright College Advising Center, 518 Old Main, 479-575-3307.

**Pre-Dental Hygiene Program:** Students entering this program should determine the specific admission requirements from the schools of their choice at an early date. Entrance requirements for the dental hygiene program at the University of Arkansas for Medical Sciences College of

Health Related Professions consist of a minimum of 37 hours of college credit to include the following courses: 4 hours of biological science, 4 hours of microbiology, 4 to 5 hours of chemistry, 3 hours of mathematics, 6 hours of English, 3 hours of speech communication, 3 hours of sociology, 3 hours of psychology, 3 hours of computer science, and 3 hours of U.S. history or U. S. government. Students wishing to earn the B.S. degree in dental hygiene through the College of Health Related Professions must also include: 6 hours of Western civilization, 3 hours of fine arts, 3 hours of humanities, and 12 hours of upper-level electives.

All students planning careers in dental hygiene should contact the Fulbright College Advising Center, 518 Old Main, 479-575-3307.

**Pre-Diagnostic Medical Sonography Program:** Students entering this program should determine the specific admission requirements from the school of their choice at an early date. The admission requirements for the diagnostic medical sonography program at the University of Arkansas for Medical Sciences College of Health Related Professions consist of a minimum of 58 semester hours to include: 6 hours of English, 4 hours of human anatomy, 4 hours of human physiology, 4 hours of introductory physics, 3 hours of communication (speech), 3 hours of college algebra, 3 hours of U.S. history or U.S. government, 6 hours of history of civilization, 3 hours of sociology, 3 hours of psychology, 3 hours of fine arts, 3 hours of humanities, 3 hours of computer fundamentals/applications, and 10 hours of electives.

All students planning careers in diagnostic medical sonography should contact the Fulbright College Advising Center, 518 Old Main, 479-575-3307.

**Pre-Medical Technology Program:** Students entering this program should determine the specific admission requirements from the school of their choice at an early date. The admission requirements for Medical Technology at the University of Arkansas for Medical Sciences College of Health Related Professions are as follows:

A minimum of 68 semester hours to include 6 hours of English, 8 hours of general chemistry, 16 hours of biology (4 hours of introductory biology, 4 hours of microbiology, 4 hours of human physiology, and 4 hours of biology electives), 3 hours of communication (speech), 3 hours of fine arts, 6 hours of Western civilization, 3 hours of college algebra, 3 hours of U.S. history, 6 hours of other social sciences (two different fields), 3 hours of humanities, and 11 hours of electives.

All students planning careers in medical technology should contact the Fulbright College Advising Center, 518 Old Main, 479-575-3307.

**Pre-Nuclear Medicine Imaging Sciences Program:** Students entering this program should determine the specific admission requirements from the school(s) of their choice at an early date. Admission requirements for the University of Arkansas for Medical Sciences, College of Health Related Professions, include completion of the courses listed below or their equivalents plus enough electives to bring the total to 85 hours.

Course requirements for admission are as follows: 12 hours of biology to include anatomy and physiology, 8 hours of general chemistry, 8 hours of general physics, 3 hours of college algebra or higher-level mathematics, 3 hours of computer science, 3 hours of statistics, 6 hours of English, 3 hours of speech communication, 3 hours of fine arts, 6 hours of Western civilization, 3 hours of U.S. history, 6 hours of social sciences, 3 hours of humanities, and at least 6 hours of upper-level credits. It is recommended that elective courses be in math and science, technical writing, computers, and health sciences.

All students planning careers in nuclear medicine technology should contact the Fulbright College Advising Center, 518 Old Main, 479-575-3307.

**Pre-Occupational Therapy Program:** Students entering this program should determine the specific admission requirements from the school(s) of their choice at an early date. The admission requirements for occupational therapy at the University of Central Arkansas consist of a minimum of 72 hours

of college credit to include the following courses: 6 hours of English, 3 hours of world literature, 3 hours of fine arts, 3 hours of health education, 3 hours of US history or government, 3 hours of humanities, 3 hours of mathematics, 2 hours of medical terminology, 6 hours of Western civilization, 3 hours of communication (speech), 15 hours of biology (must include a course in both anatomy and physiology), 4-5 hours of chemistry, 4 hours of physics, 3 hours of general psychology, 3 hours of psychology statistics, 3 hours of sociology, an additional 3 hours of either sociology or psychology electives, and 3 hours of developmental psychology (HESC 1403 Life Span Development can meet this requirement).

All students planning careers in occupational therapy should contact the Fulbright College Advising Center, 518 Old Main, 479-575-3307.

**Pre-Ophthalmic Medical Technology Program:** Students entering this program should determine specific admission requirements from the school(s) of their choice at an early date. Admission requirements for ophthalmic medical technology at the University of Arkansas for Medical Sciences College of Health Related Professions consist of a minimum of 55 credit hours to include: 4 hours of chemistry, 4 hours of anatomy, 4 hours of physiology, 4 hours of microbiology, 8 hours of biology electives, 4 hours of physics, and 3 hours of college algebra or higher level mathematics. General education courses: 6 hours of English composition, 6 hours of history of civilization/world history, 3 hours of American history or national government, 6 hours of social science, 3 hours of speech communication, 3 hours of fine arts, and 3 hours of humanities.

All students planning careers in ophthalmic medical technology should contact the Fulbright College Advising Center, 518 Old Main, 479-575-3307.

**Pre-Physical Therapy Program:** Students planning to attend physical therapy school should determine the specific admission requirements for schools of their choice at an early date.

Admission requirements for the Doctor of Physical Therapy program at the University of Central Arkansas requires completion of a baccalaureate degree to include the following: 22 hours of biology (including 4 hours of general biology, 4 hours of human anatomy, 4 hours of human physiology, 4 hours of histology, and 6 hours of upper-level animal-based courses), 8 hours of chemistry, 8 hours of physics, 3 hours general psychology, 3 hours psychology elective, 3 hours of statistics, 2 hours of medical terminology, and 3 hours of technical writing.

Any student planning a career in physical therapy should contact the Fulbright College Advising Center, 518 Old Main, 479-575-3307.

**Pre-Radiologic and Imaging Sciences:** Students entering this program should determine the specific admission requirements from the school(s) of their choice at an early date. The admission requirements for the radiologic technology program at the University of Arkansas for Medical Sciences College of Health Related Professions consist of a minimum of 32 semester hours to include the following: 6 hours of English, 4 hours of human anatomy, 4 hours of human physiology, 3 hours of communication (speech), 3 hours of college algebra, 3 hours of U.S. history, 3 hours of sociology, 3 hours of psychology, and 3 hours of computer fundamentals/applications.

All students planning careers in radiologic technology should contact the Fulbright College Advising Center, 518 Old Main, 479-575-3307.

**Pre-Respiratory Care Program:** Students entering this program should determine the specific admission requirements from the school(s) of their choice at an early date. Students who wish to enter the B.S. Degree program in Cardio-Respiratory Care in the College of Health Related Professions at the University of Arkansas for Medical Sciences must satisfactorily complete the courses listed below. The applicant must also complete the Health Occupation Aptitude Exam (administered by the department) as part of the application procedure. The B.S. program is available in Texarkana and in Little Rock.

Prerequisite requirements consist of a minimum of 67 hours, including

the following: 4 hours anatomy, 4 hours physiology, 4 hours microbiology, 4 hours chemistry, 4 hours physics, 3 hours computer fundamentals, 3 hours college algebra, 3 hours physics, 3 hours English composition, 3 hours American history or U.S. government, 6 hours history of Western civilization or world history, 3 hours fine arts, 3 hours humanities, 3 hours sociology, 3 hours psychology, and 6-11 hours of electives.

All students planning careers in Respiratory Care should contact the Fulbright College Advising Center, 518 Old Main, 479-575-3307.

### Cooperative Education

The Cooperative Education program is designed to offer students an opportunity to participate in a work experience directly related to their academic major. The program also insists that at least minimal academic credit be awarded, thus ensuring that the work experience will be directly related to the student's academic program. Cooperative Education offers advantages to students needing assistance in financing their education, and it offers the college a tangible way to demonstrate our conviction that although we do not stress vocational or professional training per se, there is nothing inimical between a liberal arts education and the world of work. Prerequisites include 45 credit hours, a cumulative GPA of 2.50, and consent of the academic coordinator. A maximum of 4 credit hours of ARSC 310V (Cooperative Education) may be applied toward the student's degree.

Detailed information about Cooperative Education may be obtained from the Fulbright College Career Counselor, 518 Old Main, 479-575-3307, or from the Office of the Dean, Fulbright College, 525 Old Main.

## COLLEGE ADMISSION REQUIREMENTS

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Students seeking admission to the J. William Fulbright College of Arts and Sciences must meet the general requirements for admission to the University. In addition, students are expected to present two units (years) of a single modern foreign or classical language. Those unable to meet this standard will be expected to begin their collegiate foreign language study as soon as possible after matriculation. For these students, the first semester of language study will be considered to satisfy the admission deficiency and will not count toward the 124 hours required for graduation (although the course will appear as University credit, and the grade received will be computed in the grade-point average). For the students who meet the Fulbright College of Arts and Sciences admission requirements and continue with the same foreign language taken in high school, the first semester of language study will be considered remedial and will not count toward the 124 hours required for graduation (although the course will appear as University credit and the grade received will be computed in the grade-point average). Students transferring from other colleges at the University of Arkansas or from other institutions are expected to meet the same entrance standard.

## COLLEGE SCHOLARSHIPS

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Foremost among scholarships available in the J. William Fulbright College of Arts and Sciences is the Sturgis Fellowship. This scholarship enables Fulbright College to offer outstanding graduates of secondary and preparatory schools undergraduate fellowships valued at \$50,000 for four collegiate years.

Students studying in the humanities or classics may qualify for the J. William and Elizabeth W. Fulbright Scholarship for study abroad. This award is for students who are at least juniors and is intended to support a year of study abroad.

The King Fahd Center for Middle East and Islamic Studies offers four-year and two-year undergraduate scholarships for superior students interested in pursuing the study of the Middle East or Islam.

In addition, students may compete for a number of privately endowed scholarships, which are awarded on a competitive basis to those who qualify. Application for these general Fulbright College scholarships and awards is made through the Office of the Dean, 525 Old Main. Students may obtain more detailed information about the above-named scholarships and other Fulbright College scholarships at <http://www.uark.edu/~arsc/students/scholarships.html>.

Other scholarships are available from the departments of Fulbright College. Information may be sought from the departmental chairperson of the student's major.

## STUDENT ORGANIZATIONS

There are many general-interest societies and organizations to which students may belong, and nearly every department of the University maintains an honor society through which high scholarship is rewarded. Students in Fulbright College may aspire to membership in the following organizations:

Alpha Chi Sigma (chemistry)  
 Alpha Epsilon Delta (pre-medical, medical technology, pre-dental)  
 Alpha Kappa Delta (sociology)  
 Alpha Psi Omega (drama)  
 American Chemical Society (chemistry)  
 Delta Phi Alpha (German)  
 Eta Sigma Phi (Greek and Latin)  
 Gamma Theta Upsilon (geography)  
 Kappa Kappa Psi (band, men)  
 Kappa Tau Alpha (journalism)  
 Lambda Alpha (anthropology)  
 Lambda Pi Eta (communication)  
 Lambda Tau (writers)  
 Omicron Delta Epsilon (economics)  
 Phi Alpha (social work)  
 Phi Alpha Theta (history)  
 Phi Beta Delta (international scholarship)  
 Phi Beta Kappa (arts and sciences)  
 Phi Kappa Phi  
 Phi Mu Alpha (music, men)  
 Pi Delta Phi (French)  
 Pi Kappa Delta (forensics)  
 Pi Mu Epsilon (mathematics)  
 Pi Sigma Alpha (political science)  
 Psi Chi (psychology)  
 Sigma Alpha Iota (music, women)  
 Sigma Delta Pi (Spanish)  
 Sigma Gamma Epsilon (geology)  
 Sigma Pi Sigma (physics)  
 Tau Beta Sigma (band, women)

## COLLEGE ACADEMIC REGULATIONS

Courses of study in the Fulbright College of Arts and Sciences are designed to give students the comprehensive view of society that the modern world requires. Students who enroll in Fulbright College, or who elect some of its courses, have an opportunity to gain a broad cultural education, which is a part of intelligent living and, at the same time, to prepare for professions or to acquire technical training in the sciences. The college has two major teaching functions: to provide basic general education in the arts and sciences necessary

to all persons for effective participation in the complex world in which we live; and, second, to furnish the student an opportunity to specialize in the field of the student's choice.

To implement the first of these aims and to furnish a broad base for the accomplishment of the second, the faculty of Fulbright College has adopted the requirements listed below for each degree.

Specific course requirements may be fulfilled in one of four ways:

1. Establishing credit in approved courses:
  - a. by enrolling in and completing the required work in the course,
  - b. by examination (credit will be entered as CR on a student's record as explained in Advanced-Standing Programs, page 46),
  - c. by advanced achievement, i.e., by satisfactory completion of a more advanced course of a sequence. For example, students who earn a grade of "C" or better in a third-semester foreign language course may be granted credit for the second semester course upon recommendation of the Foreign Language Department and approval by the Dean of the college. (This does not apply to work taken by correspondence or in transfer.)
2. Gaining exemption by examination. Announced exemption examinations are routinely offered in several courses. Students may consult any department or the dean's office concerning exemption examinations.
3. Advanced placement by examination. A student who is granted advanced placement may elect to substitute a more advanced course for the listed required course.
4. Transfer credit. Students presenting transfer credit in lieu of stated requirements may be asked to present official course descriptions, etc. Transfer work with grades of "D" or "F" will not be accepted.

## DEGREE COMPLETION PROGRAM POLICY

### Fulbright College of Arts and Sciences Graduation Requirements

In addition to the specific course requirements for the degree plan and major, be aware that there are general graduation requirements that every student in Fulbright College must complete.

1. *Minimum* Total Semester Hour Requirement  
 B.A., B.M., B.S. and B.S.W. Degrees: 124 hours  
 B.F.A.: 128 hours
2. Residency Requirement

- a) 30 Hour Rule (University Requirement)

The full senior year must be completed in residence except that a senior who has already met the minimum residency requirement will be permitted to earn not more than 12 of the last 30 hours in extension or correspondence courses or in residence at another accredited institution granting the baccalaureate degree. No more than six of these 12 hours may be correspondence courses. The minimum residence requirement is 36 weeks and 30 semester hours. Residency for the senior year is defined as a period during which the student must be enrolled in courses offered on the campus in Fayetteville. This is intended to provide adequate contact with the University and its faculty for each student who is awarded a degree. Colleges and departments have the authority to prescribe residence requirements that exceed those described here. *Fulbright College requires that no fewer than 30 hours of credit must be in courses offered by the college.*

- b) 24 Hour Rule (College Requirement)

A student graduating from Fulbright College must have completed

at least 24 hours of 3000 and 4000 level courses from departments in Fulbright College.

3. 40-Hour Rule

Students must present for degree credit at least 40 hours of work in courses numbered 3000 and above. Included in these 40 hours can be courses numbered 2000 if each has a specific course designated as a prerequisite. (The following courses are excluded: MILS 2001 and 2011, AERO 2001 and 2011, and foreign language courses numbered 2003 and 2013.) These courses may be taken from other colleges or universities. However, do not forget the college residency requirement, specifically the 24 hour rule.

4. Grade-Point Average

Students graduating from Fulbright College must have a minimum cumulative GPA of 2.00.

5. "D" - Rule

If a student has grades of "D" in more than 25 percent of the hours presented for graduation credit, she/he will not be allowed to graduate.

6. Eight Hour Rule

Students may submit no more than eight semester credit hours from the following list of course alpha codes. These may be used for degree credit only with the specific recommendation of the adviser.

- AERO Aerospace Studies\*
- AGED Agricultural and Extension Education
- DEAC Dance Education Activity\*
- ETEC Educational Technology
- EXED Extension Education
- HLSC Health Science
- ITED Industrial/Technical Education
- MILS Military Science\*
- PEAC Physical Education Activity\*
- PHED Physical Education
- RECR Recreation
- UNIV University
- VOED Vocational Education

\*No more than four of the eight hours may be applied from AERO, MILS, PEAC, or DEAC (combined). See page 124 #5

7. 68-Hour Rule

Students who transfer into the University may present for degree credit no more than 68 hours of lower division course work (1000 and 2000 level).

8. Writing Requirement

Students graduating from Fulbright College must write a research/analytical paper for at least one upper-division course in his or her major. Each department has determined its own procedures for certifying completion of this requirement. Questions should be referred to the departmental chairperson. A student may choose to write a senior thesis in a major area of study. The thesis may be accorded up to six hours of credit. Defense of the thesis before a committee is required. Satisfactory completion of an honors project or a senior thesis may be submitted to meet the college writing requirement.

Questions concerning fulfilling the requirements should be referred to the student's adviser or to the dean's office, which will maintain current lists of approved courses, experimental offerings approved to fulfill requirements for a specified period of time, examination schedules, and other options available to the student.

**Fulbright College Senior Scholar:** A student who has earned at least 50 percent of his or her college credits at the University of Arkansas and has maintained a grade-point average of at least 3.80 through the semester preceding graduation shall earn the distinction of "Fulbright College Senior Scholar." In addition to completing one of the sets of degree requirements listed below,

a student must also complete the University Requirements for Graduation, including the University Core requirements (see page 40).

## DEGREE REQUIREMENTS

<b>Bachelor of Arts and Bachelor of Social Work</b>	<b>Hours</b>
1. A total of 124 semester hours.	
2. University Core:	
ENGL 1013, ENGL 1023, Composition I, II	6
Advanced Composition Requirement (see page 41)	0-3
HIST 2003, HIST 2013, or PLSC 2003 (PLSC 2003 required for BSW Social Work majors)	3
3. College Requirements	
Fine Arts: six hours to include at least two different arts to be selected from the following eight courses:	6
ARTS 1003 or ARHS 1003 (except for art majors)	
DRAM 1003 (except for drama majors)	
COMM 1003	
MLIT 1003	
DANC 1003	
ARCH 1003 or LARC 1003	
Foreign language (Depending upon placement)	0-12
Students must demonstrate proficiency in a single modern or classical language other than English, usually by completing a sequence of four courses (1003, 1013, 2003, 2013). The first semester of foreign language study (1003) is normally considered remedial and, thus, does not apply toward the 124 hours needed for graduation. Students meeting the normal admission standard (two years of one foreign language in high school) may expect to satisfy this requirement with fewer courses, depending upon placement. In cases of unusually thorough preparation, or in the case of international students, exemption may be sought from the Department of World Languages, Literatures, and Cultures.	
PHIL 2003 or PHIL 2103	3
MATH 1203 and one of the following five courses: MATH 2033, MATH 2043, MATH 2053, MATH 2183, or MATH 2554	3-7
Natural sciences with laboratory	12
At least 4 hours must be biological science, and at least 4 hours must be physical science. It is strongly recommended that students take an 8-hour sequence in one of the natural sciences, to be selected from the following:	
CHEM 1103/1101L, CHEM 1123/1121L, GEOL 1113/1111L, GEOL 1133/1131L, or PHYS 2013/2011L, PHYS 2033/2031L	
Four to eight hours in the biological sciences may be selected from the following courses:	
ANTH 1013/1011L	
BIOL 1543/1541L	
(ANTH 1013/1011L or BIOL 1543/1541L required for BSW Social Work majors)	
BIOL 1613/1611L	
BIOL 2013/2011L or BIOL 1603/1601L	

Four to eight hours in the physical sciences may be selected from:

- ASTR 2003/2001L
- CHEM 1053/1051L
- CHEM 1103/1101L
- CHEM 1123/1121L
- GEOL 1113/1111L
- GEOL 1133/1131L
- PHYS 1023/1021L
- PHYS 2013/2011L
- PHYS 2033/2031L
- PHYS 2054
- PHYS 2074

Social science, to be selected from:

- ANTH 1023
- ECON 2013, ECON 2143
- GEOG 2003
- PLSC 2013
- PSYC 2003
- SOCI 2013, SOCI 2033 (at least 3 hours must be taken in anthropology, economics, psychology, or sociology, with not more than one course taken from any one department [PSYC 2003 and SOCI 2013 required for BSW Social Work majors])

- COMM 1313 3
- HIST 1003, HIST 1013 or HIST 1113, HIST 1123 6
- WLIT 1113 and 3 hours to be chosen from WLIT 1123, a foreign language literature course, any other world literature course, CLST 1003, or CLST 1013 6

4. Completion of the requirements for one of the majors described in the section titled Majors and Courses of Instruction. Second or dual majors may be chosen from the following fields:

- African-American Studies
- European Studies
- Latin American Studies
- Middle East Studies
- Russian Studies

See page 126 for the combined academic and medical degree.

See page 115 for minors.

- 5. Presentation of at least 40 semester hours in courses numbered 3000 and above or courses numbered 2000 with specific course prerequisites excluding MILS 2002, MILS 2012, AERO 2011, AERO 2021, and foreign language courses numbered 2003 and 2013. At least 24 of the 40 hours must be in courses numbered above 3000 and taken in Fulbright College.
- 6. Unless exceptions are granted at the time of admission to the University of Arkansas, transfer work in which grades of “D” or “F” were earned will not be allowed toward credit for graduation. For more information, see the Admissions chapter in this catalog.
- 7. If the student’s degree program is strengthened by course work in the following departments, as many as eight hours may be applied toward the degree with the consent of the adviser: AERO, AGED, DEAC, EXED, HLSC, ITED, MILS, PEAC, PHED, RECR, UNIV, VOED.  
No more than four of the eight hours may be applied from AERO, MILS, PEAC, or DEAC, unless a student completes an ROTC program and receives a commission. Upon receipt of notification in the dean’s office of completion of ROTC program and receipt of commission, up to 16 hours of AERO or MILS may be applied toward the student’s degree.
- 8. Each student graduating from Fulbright College must write a research/

analytical paper for at least one upper-division course in his or her major. Satisfactory completion of an honors project or a senior thesis may fulfill this requirement. Students should consult with their major adviser for departmental procedures in satisfying this requirement.

- 9. Course work taken to remove course deficiencies assigned at the time of admission or transfer will not be counted toward the degree. Similarly, courses considered to be remedial or developmental will not count toward the degree.
- 10. Those courses constituting the State Minimum Core of 35 hours for the University of Arkansas are set forth on page 40 of this catalog. These courses, or courses transferred with a grade of “C” or better from any other state institution in Arkansas, may be used in partial or full satisfaction of the Fulbright College general education core.

**Bachelor of Science**

**Hours**

- 1. A minimum of 124 semester hours. (Departments may require additional hours up to a total of 132.)
- 2. University Core:
  - ENGL 1013, ENGL 1023, Composition I, II 6
  - Advanced Composition Requirement (see page 41) 0-3
  - HIST 2003, HIST 2013, OR PLSC 2003 3
- 3. College requirements:
  - Foreign language (Depending upon placement) 0-9  
Students must demonstrate proficiency in a single modern or classical language other than English, usually by completing a sequence of three courses (1003, 1013, 2003). The first semester of foreign language study (1003) is normally considered remedial and, thus, does not apply toward the 124 hours needed for graduation. Students meeting the normal admission standard (two years of one foreign language in high school) may expect to satisfy this requirement with fewer courses, depending upon placement. In cases of unusually thorough preparation, or in the case of international students, exemption may be sought from the Department of Foreign Languages.
  - World literature, foreign literature, philosophy 9  
(to be selected from PHIL 2003, PHIL 2103, PHIL 2203), fine arts (to be selected from at least two areas)
  - HIST 1003, HIST 1013 or HIST 1113, HIST 1123 6
  - Social sciences, to be selected from: 3  
ANTH 1023  
ECON 2013, ECON 2143  
GEOG 2003  
PSYC 2003  
SOCI 2013
  - Science and mathematics 18  
(to be determined by the department of major and to be selected from at least two departments other than the department of the major)
- 4. Completion of the requirements for one of the majors described in the section entitled Degree Programs and Courses. Majors may be chosen in the following fields:
  - Biology
  - Chemistry
  - Earth Science
  - Geology
  - Mathematics
  - Physics



See page 126 for the combined academic and medical degree.

See page 115 for minors.

5. Presentation of at least 40 semester hours in courses numbered 3000 and above or courses numbered 2000 with specific course prerequisites excluding MILS 2002, MILS 2012, AERO 2011, AERO 2021, and foreign language courses numbered 2003 and 2013. At least 24 of the 40 hours must be in courses numbered above 3000 and taken in Fulbright College. See also College Requirements on page 122.
6. See item #6, at left.
7. See item #7, at left.
8. See item #8, at left.
9. See item #9, at left.
10. See item #10, at left.

**Bachelor of Fine Arts**

**Hours**

1. A minimum of 128 semester hours.
2. University Core:
  - ENGL 1013, ENGL 1023, Composition I, II 6
  - Advanced Composition Requirement (see page 41) 0-3
  - HIST 2003 or 2013 or PLSC 2003 3
3. College requirements:
  - Natural Sciences 8
  - 4 hours to be selected from
    - PHYS 1023/1021L
    - CHEM 1053/1051L
    - ASTR 2003/2001L
    - GEOL 1113/1111L
  - 4 hours to be selected from
    - ANTH 1013/1011L
    - BIOL 1543/1541L
    - BIOL 1613/1611L or
    - BIOL 1603/1601L
  - Social sciences, to be selected from: 3
    - ANTH 1023
    - ECON 2013, ECON 2143
    - GEOG 2003
    - PSYC 2003
    - (PSYC 2003 is required for art education majors.)
    - SOCI 2013, SOCI 2033
  - Foreign language (Depending upon placement) 0-9
    - Students must demonstrate proficiency in a single modern or classical language other than English, usually by completing a sequence of three courses (1003, 1013, 2003). The first semester of foreign language study (1003) is normally considered remedial and, thus, does not apply toward the 124 hours needed for graduation. Students meeting the normal admission standard (two years of one foreign language in high school) may expect to satisfy this requirement with fewer courses, depending upon placement. In cases of unusually thorough preparation, or in the case of international students, exemption may be sought from the Department of Foreign Languages.
  - COMM 1313 or PHIL 2203 or an additional 3
    - foreign language (COMM 1313 is required for art education majors.)
  - MATH 1203 3
  - HIST 1003, HIST 1013 or HIST 1113, HIST 1123 6

WLIT 1113, WLIT 1123

6

4. Presentation of at least 40 semester hours in courses numbered 3000 and above or courses numbered 2000 with specific course prerequisites excluding MILS 2002, MILS 2012, AERO 2011, AERO 2021, and foreign language courses numbered 2003 and 2013. At least 24 of the 40 hours must be in courses numbered above 3000 and taken in Fulbright College. See also College Requirements on page 122.
5. See item #6, at left.
6. See item #7, at left.
7. See item #8, at left.
8. See item #9, at left.
9. See item #10, at left.

**Bachelor of Music**

**Hours**

1. A minimum of 124 semester hours.
2. University Core:
  - ENGL 1013, ENGL 1023, Composition I, II 6
  - Advanced Composition Requirement (see page 41) 0-3
  - HIST 2003, HIST 2013, or PLSC 2003 3
3. College requirements:
  - Foreign language (Depending upon placement) 0-6
    - Students must demonstrate proficiency in a single modern or classical language other than English, usually by completing a sequence of two courses (1003, 1013). The first semester of foreign language study (1003) is normally considered remedial and, thus, does not apply toward the 124 hours needed for graduation. (For a major emphasis in voice, 9 hours additional is required in two different foreign languages appropriate to vocal repertoire. See Music Department requirements.)
  - WLIT 1113, World literature 3
  - MLIT 1003, Fine arts 3
  - Natural sciences 8
    - (to be selected from the courses listed under the natural science requirements for the B.A. degree ñ 4 hours must be from biological science area, and 4 hours must be from physical science area)
  - HIST 1003, HIST 1013 or HIST 1113, HIST 1123 6
  - MATH 1203 3
  - Social sciences to be selected from: 3
    - ANTH 1023
    - ECON 2013, ECON 2143
    - GEOG 2003
    - PSYC 2003
    - SOCI 2013, SOCI 2033
4. Completion of the requirements for one of the majors described in the section entitled Majors and Courses of Instruction. Major fields of specialization may be chosen from the following: Applied Music (performance areas are specified under Courses of Instruction), Music Theory, Composition, Music Education.
5. Presentation of at least 40 semester hours in courses numbered 3000 and above or courses numbered 2000 with specific course prerequisites excluding MILS 2002, 2012, AERO 2011, 2021, and foreign language courses numbered 2003 and 2013. At least 24 of the 40 hours must be in courses numbered above 3000 and taken in Fulbright College. See also College Requirements on page 122.
6. See item #6, page 124.
7. See item #7, page 124.
8. See item #8, page 124.

- 9. See item #9, page 124.
- 10. See item #10, page 124.

**Combined Academic and Medical or Dental Degree**

Fulbright College offers both the Bachelor of Arts and Bachelor of Science degrees in medical science or medical science (dentistry). A student may substitute the first year of regular medical or dental work taken in any standard, approved medical or dental school for 30 hours of the total required for the Bachelor of Arts degree or for 33 hours of the total required for the Bachelor of Science degree provided that the following requirements are met:

1. Completion of all core requirements for a B.A. or B.S. degree, as appropriate, prior to student's entrance in medical or dental school.
2. Completion of a minimum of 12 hours of courses numbered above 3000 taken in Fulbright College.
3. Completion of at least 30 hours immediately prior to student's entrance in medical or dental school in residence in Fulbright College.

Students interested in this degree should consult with their adviser or with the Fulbright College dean's office early in their program. Formal application for the degree should be made to the Registrar.

This program is for highly qualified students with outstanding academic records who may be eligible for early admission to medical school or dental school programs. The year of a medical or dental study substitutes for the major in the B.A. or the B.S. degree program.

**Additional Majors**

Students fulfilling all requirements for the B.S., B.S.W., B.F.A. and B.M. degrees, including all core requirements and at least one major in these degree programs, may also claim an additional major in a humanistic discipline, social science, or interdisciplinary program associated with a BA degree. Upon completing all major requirements for that discipline, students wishing to have an additional major will not also receive a BA degree, but the additional major will be made part of their transcript. Students interested in this option should consult regularly with an academic adviser in the additional major and must notify the Fulbright College dean's office (MAIN 525) when degree application is made.

**Honors Program**

To create an intellectual environment that challenges the best of students, the J. William Fulbright College of Arts and Sciences provides a comprehensive program of Honors Studies. This includes the Fulbright College Scholars Program, a four-year interdisciplinary honors program for students of superior academic ability or artistic talent, and the Departmental Honors Program, an honors program emphasizing directed independent study within a department or discipline of the college.

For admission into the Fulbright Honors Program, an incoming student must have at least a 3.5 high school grade point average and a minimum ACT composite score of 28 or 1240 SAT. A current Fulbright College student must have a University of Arkansas grade point average of 3.5 or above and a faculty recommendation from the department of study.

A student who successfully completes a program of Honors Studies within Fulbright College is eligible to receive a baccalaureate degree with the distinction Fulbright College Scholar *Cum Laude*, or Departmental Scholar *Cum Laude* in the major field of study. Higher distinctions of *Magna Cum Laude* or *Summa Cum Laude* may be awarded to outstanding honors students by recommendation of the Fulbright College Honors Council.

To earn the distinction Fulbright College Scholar *Cum Laude* at graduation, a student must successfully complete the honors core curriculum, maintain a minimum grade-point average of 3.5, and satisfy requirements for departmental honors in the major field of study, including preparation and oral defense of an honors thesis. The Honors Council may award the

higher distinctions of *Magna Cum Laude* or *Summa Cum Laude* based upon a student's total academic performance, including the academic transcript, the quality of the scholarly activity pursued within the major field of study, and the breadth of college study as a whole.

To earn the distinction of Departmental Scholar *Cum Laude* at graduation, a student must successfully complete requirements prescribed by the major department, including an honors thesis and oral examination, maintain a minimum grade-point average of 3.5, and take 12 hours (which may include six hours of thesis) in Honors Studies. If a student demonstrates superior academic performance or an exceptionally high level of scholarly activity, the Honors Council may award the distinction of *Magna Cum Laude*. In exceptional instances where truly outstanding work within the major field is coupled with the superior understanding of its relationship to the college work as a whole, the distinction *Summa Cum Laude* may be awarded.

For more information about Honors Studies within Fulbright College, visit the web site at [www.uark.edu/honors](http://www.uark.edu/honors).

**Degrees with Honors**

The J. William Fulbright College of Arts and Sciences is dedicated to providing students a liberal education in the arts, humanities, and sciences. Such an education should be soundly based, innovative, and enriched by a creative faculty. This is especially true for students with superior academic ability or artistic talent. To achieve these aims, the college faculty has developed and participates in the Fulbright College Scholars Program and the Departmental Honors Program.

**Requirements for the Fulbright College Scholars Program:** Credit or exemption for University Core in English composition, including ENGL 1013, ENGL 1023, and ENGL 2003, and in American history or American government, completion of the requirements for departmental honors in a department or study area of the college, including preparation and oral defense of an honors thesis, a cumulative grade-point average of 3.5 or above, and completion of the honors core curriculum. Students who do not have at least a 3.5 GPA will not be allowed to graduate with honors.

**Requirements for Departmental Honors:** Specific academic requirements including course work, participation in departmental honors colloquia or seminars, and independent study projects are established by the faculty of the individual departments or study areas and are approved by the Honors Council. However, all departmental honors students must have a 3.5 cumulative grade-point average, complete and defend an honors thesis, and take 12 hours (which may include six hours of thesis) in Honors Studies. Information concerning these requirements is given within each department's catalog listings. The following outlines the minimum academic requirements of the honors core curriculum for the B.A., B.S.W., B.S., B.M. and B.F.A. degree programs.

**Honors Core Curriculum**

<b>Bachelor of Arts or Bachelor of Social Work Degree</b>	<b>Hours</b>
<i>Humanities and Social Sciences Option 1</i>	
<b>Core – 27 hours; 15 hours must be at honors level</b>	
World Civilization	6
HIST 1113H or 1113 World Civilization I	
HIST 1123H or 1123 World Civilization II	
World Literature	6
WLIT 1113H or 1113 World Literature I and	
WLIT 1123H or 1123 World Literature II or foreign language literature course, any other WLIT course, CLST 1003 or CLST 1013	

Philosophy	3
PHIL 2003H or 2003 Introduction to Philosophy	
Fine Arts	6
ARCH 1003H or 1003 Architecture Lecture	
ARHS 1003H or 1003 Art Lecture	
COMM 1003H or 1003 Film Lecture	
DANC 1003H or 1003 Introduction to Dance	
DRAM 1003 or 1003 Theater Lecture	
MLIT 1003H or 1003 Music Literature	
Social Sciences	6
ANTH 1023H or 1023 Cultural Anthropology	
GEOG 2003 World Regional Geography	
ECON 2013H or 2013 Macroeconomics	
ECON 2023H or 2023 Microeconomics	
PSYC 2003H or 2003 General Psychology (required for BSW Social Work majors)	
SOCI 2013H or 2013 General Sociology (required for BSW Social Work majors)	
<b>Humanities and Social Sciences Option 2</b>	
<b>Core – 28 hours; 16 hours must be at honors level</b>	
HUMN 1114H, HUMN 1124H,	16
HUMN 2114H, HUMN 2124H	
Philosophy	3
PHIL 2003H or 2003 Introduction to Philosophy	
Fine Arts	6
ARCH 1003H or 1003 Architecture Lecture	
ARHS 1003H or 1003 Art Lecture	
COMM 1003H or 1003 Film Lecture	
DANC 1003H or 1003 Introduction to Dance	
DRAM 1003 or 1003 Theater Lecture	
MLIT 1003H or 1003 Music Literature	
Social Sciences	6
ANTH 1023H or 1023 Cultural Anthropology	
GEOG 2003 World Regional Geography	
ECON 2013H or 2013 Macroeconomics	
ECON 2023H or 2023 Microeconomics	
PSYC 2003H or 2003 General Psychology (required for BSW Social Work majors)	
SOCI 2013H or 2013 General Sociology (required for BSW Social Work majors)	
Students pursuing either option must also complete the following:	9
Honors Colloquium	
Social Science Colloquium	
Natural Science or Math Colloquium	
Foreign Language: (depending upon placement)	0-12
See your adviser. Students must demonstrate proficiency in a single modern or classical language other than English, usually by completing a sequence of four courses (1003, 1013, 2003, 2013). See Fulbright College Admission Requirements (page 119). Students meeting the normal admission standard (two years of high school language) may expect to satisfy this requirement with fewer courses, depending upon placement. In cases of unusually thorough preparation, or in the case of international students, exemption may be sought from the department of foreign languages.	
Natural Science and Mathematics:	
Core – 15-16 hours; 8 hours must be at honors level	

Natural Sciences	12
At least 4 hours must be chosen from biological and 4 hours from physical	
Biological Sciences	
ANTH 1013/1011M or 1013/1011L Intro to Biological Anthropology	
BIOL 1543/1541M or 1543/1541L Principles of Biology	
BIOL 1603/1601M or 1603/1601L Principles of Zoology	
BIOL 1613/1611M or 1613/1611L Plant Biology	
BIOL 2013/2011M or 2013/2011L General Microbiology	
Physical Sciences	
ASTR 2003H/2001M or 2003/2001L Survey of the Universe	
CHEM 1103/1101L University Chemistry I	
CHEM 1123H/1121M or 1123/1121L University Chemistry II	
GEOL 1113H/1111M or 1113/1111L General Geology	
GEOL 1133/1131L Environmental Geology	
PHYS 1023H/1021M or 1023/1021L Physics and Human Affairs	
PHYS 2054H/(M) or 2054/(L) University Physics I	
PHYS 2074H/ (M) or 2074/(L) University Physics II	
Mathematics	3-4
MATH 2033 Mathematics in Society	
MATH 2043 Survey of Calculus	
MATH 2053 Finite Math	
MATH 2183 Mathematical Reasoning	
MATH 2554H or 2554 Calculus I	
MATH 2564H or 2564 Calculus II	
MATH 2574H or 2574 Calculus III	
<b>Bachelor of Science Degree</b>	<b>Hours</b>
<b>Humanities and Social Sciences Option 1</b>	
<b>Core – 18 hours; 9 hours must be at honors level</b>	
World Civilization	6
HIST 1113H or 1113 World Civilization I	
HIST 1123H or 1123 World Civilization II	
Fine Arts, World Literature, Philosophy	9
Must be selected from two different areas.	
<b>Fine Arts</b>	
ARCH 1003H or 1003 Architecture Lecture	
ARHS 1003H or 1003 Art Lecture	
COMM 1003H or 1003 Film Lecture	
DANC 1003H or 1003 Introduction to Dance	
DRAM 1003H or 1003 Theater Lecture	
MLIT 1003H or 1003 Music Lecture	
<b>World Literature</b>	
WLIT 1113H or 1113 World Literature I	
WLIT 1123H or 1123 World Literature II or foreign language course, any other WLIT course, CLST 1003 or CLST 1013	
<b>Philosophy</b>	
PHIL 2003H or 2003 Introduction to Philosophy	
Social Science	3
Select from the following.	
ANTH 1023H or 1023 Cultural Anthropology	
ECON 2013H or 2013 Macroeconomics	

ECON 2023H or 2023 Microeconomics  
 GEOG 2003 World Regional Geography  
 PSYC 2003H or 2003 General Psychology  
 SOCI 2013H or 2013 General Sociology

**Humanities and Social Sciences Option 2**  
**Core – 18 hours; 9 hours must be at honors level**  
 HUMN 1114H, HUMN 1124H, HUMN 2114H 12  
 Humanities/Fine Arts/World Literature/Philosophy  
 Select one course from humanities, fine arts, world literature or philosophy: 3

**Humanities**  
 HUMN 2124H

**Fine Arts**  
 ARCH 1003H or 1003 Architecture Lecture  
 ARHS 1003H or 1003 Art Lecture  
 COMM 1003H or 1003 Film Lecture  
 DANC 1003H or 1003 Introduction to Dance  
 DRAM 1003H or 1003 Theater Lecture  
 MLIT 1003H or 1003 Music Lecture

**World Literature**  
 WLIT 1113H or 1113 World Literature I  
 WLIT 1123H or 1123 World Literature II or foreign language course, any other WLIT course, CLST 1003 or CLST 1013

**Philosophy**  
 PHIL 2003H or 2003 Introduction to Philosophy 3  
 Social Sciences

ANTH 1023H or 1023 Cultural Anthropology  
 ECON 2013H or 2013 Macroeconomics  
 ECON 2023H or 2023 Microeconomics  
 GEOG 2003 World Regional Geography  
 PSYC 2003H or 2003 General Psychology  
 SOCI 2013H or 2013 General Sociology

**Students pursuing either option must also complete the following:**

Honors Colloquium 9  
 Humanities Colloquium  
 Social Science Colloquium  
 Natural Science or Math Colloquium

Natural Sciences and Mathematics  
 Core – 20 hours; 16 hours must be at honors level  
 Complete 16 honors hours from at least two of the five different areas below. At least one class from Area 5 is required, although not necessarily at the Honors level.

**Natural Sciences** 16

Area 1  
 ASTR 2003H/2001M Survey of the Universe  
 PHYS 2054H/2054H(M) University Physics I  
 PHYS 2074H/2074H(M) University Physics II

Area 2  
 BIOL 1543/1541M Principles of Biology  
 BIOL 1603/1601M Principles of Zoology  
 BIOL 1613/1611M Plant Biology  
 BIOL 2013/2011M General Microbiology

Area 3  
 CHEM 1103/1101L University Chemistry I  
 CHEM 1123H/1121M University Chemistry II  
 CHEM 1213/1211L Chemistry I for Majors  
 CHEM 1223/1221L Chemistry II for Majors

CHEM 3603H/3602M Organic Chemistry I  
 CHEM 3613H/3612M Organic Chemistry II

Area 4  
 GEOL 1113H/1111M General Geology  
 GEOL 1133/1131L Environmental Geology

**Mathematics** 4  
 Area 5  
 MATH 2554H or 2554 Calculus I  
 MATH 2564H or 2564 Calculus II  
 MATH 2574H or 2574 Calculus III

Foreign Language: (depending upon placement) 0-9  
 See your adviser. Students must demonstrate proficiency in a single modern or classical language other than English, usually by completing a sequence of three courses (1003, 1013, 2003). Students meeting the normal admission standard (two years of high school language) may expect to satisfy this requirement with fewer courses, depending upon placement. In cases of unusually thorough preparation, or in the case of international students, exemption may be sought from the department of foreign languages.

**Bachelor of Music Degree** **Hours**

**Humanities Option 1**

World Civilization 6  
 HIST 1113H, HIST 1123H

World Literature 3  
 WLIT 1113H

Fine Arts 3  
 MLIT 1003H

Colloquium in Humanities 3  
 Course offerings vary each semester.

**Humanities Option 2**

Honors Roots of Culture 12  
 HUMN 1114H, HUMN 1124H, HUMN 2114H

Fine Arts 3  
 MLIT 1003H

Colloquium in Humanities 3  
 Students pursuing Humanities Option 2 who complete the fourth semester of Honors Roots Culture (HUMN 2124H) will receive a 3-hour waiver for the Humanities Colloquium requirement. Otherwise, they must choose course work from the humanities colloquia course listing. Course offerings vary each semester.

**Students pursuing either option must also complete the following:**

Foreign Language: (depending upon placement) 0-6  
 See your adviser.

Social Science 3  
 Select from the following.  
 ANTH 1023H, GEOG 2103H, ECON 2013H,  
 ECON 2023H, ECON 2013 and ECON 2023,  
 PSYC 2003H, SOCI 2013H

Natural Sciences: 8  
 Eight hours of honors credit to be chosen from the lab sciences. See adviser for specific science course listing.

Mathematics: 3-4  
 Fulbright Scholars must fulfill the math requirement of MATH 2043 or MATH 2053 or MATH 2183 or MATH 2554.

**Bachelor of Fine Arts Degree**

**Humanities Option 1**  
 World Civilization 6  
 HIST 1113H, HIST 1123H  
 World Literature 3  
 WLIT 1113H  
 Fine Arts, World Literature II, and Philosophy 6  
 Must be selected from two different areas.  
 Fine Arts  
 COMM 1003H, DANC 1003H, DRAM 1003H,  
 MLIT 1003H  
 Philosophy  
 PHIL 2003H  
 World Literature II  
 WLIT 1123H  
 Colloquium in Humanities 3  
 Course offerings vary each semester.

**Humanities Option 2**  
 Honors Roots of Culture 12  
 HUMN 1114H, HUMN 1124H, HUMN 2114H  
 Honors Roots of Culture, Philosophy, Humanities Col-  
 loquium 6-7  
 Honors Roots of Culture  
 HUMN 2124H  
 Philosophy  
 PHIL 2003H  
 Colloquium in Humanities  
 Course offerings vary each semester.

**Students pursuing either option must also complete the following:**  
 Foreign Language: (depending on placement) 0-9  
 See your adviser.  
 Social Science 3  
 Select from the following.  
 ANTH 1023H, ECON 2013H,  
 ECON 2023H, ECON 2013 and ECON 2023,  
 PSYC 2003H, SOCI 2013H  
 Colloquia in Social Sciences 3  
 Must be selected from two different areas of social sci-  
 ences. Course offerings vary each semester. See adviser.  
 Natural Science: 8  
 Eight hours of honors to be chosen from lab sciences.  
 See adviser for specific science course listing.  
 Mathematics: 3-4  
 Fulbright Scholars must fulfill the math requirement of  
 MATH 2043 or MATH 2053 or MATH 2183 or  
 MATH 2554.

**GRADUATE STUDIES**

The Graduate School, in cooperation with the faculty of Fulbright College of Arts and Sciences, offers work leading to the graduate certificate or to the degrees of Master of Arts, Master of Science, Master of Music, Master of Fine

Arts, Master of Public Administration, Master of Social Work, and Doctor of Philosophy.

Students interested in any of these advanced degrees should consult the *Graduate School Catalog* or the Dean of the Graduate School.

**ACCREDITATIONS**

The Bachelor of Science (B.S.) degree program in chemistry is accredited by the American Chemical Society. The American Council on Education in Journalism and Mass Communications has accredited the Bachelor of Arts (B.A.) degree program in journalism. The degree programs in the Department of Music are accredited by the National Association of Schools of Music. The Doctor of Philosophy (Ph.D.) degree program in psychology is accredited by the American Psychological Association. The Bachelor of Social Work (B.S.W.) degree and the Master of Social Work (M.S.W.) degree are accredited by the Council on Social Work Education.

**DEPARTMENTS, MAJORS AND MINORS**

**AFRICAN-AMERICAN STUDIES (AAS)**

- Charles Robinson  
 Chair of Studies  
 416 Old Main  
 479-575-3001
- Professor Morgan (sociology)
  - Associate Professors Jones (music), Robinson (history)
  - Assistant Professor D'Alisera (anthropology)

Students who wish to gain knowledge and understanding of the history, social organization, current status, and problems of African-Americans and of their contributions to the American heritage may elect a combined major in African-American studies together with a major in anthropology, economics, history, philosophy, political science, psychology, sociology, or social welfare.

**Requirements for a Combined Major in African-American Studies:**

1. Eighteen hours in African-American Studies courses in addition to the requirements for the departmental major;
2. African-American Studies required courses: HIST 3233 African-American History to 1877, HIST 3243 African American History since 1877, SOCI 3033 American Minorities, ANTH 4583 Peoples and Cultures of Sub-Saharan Africa;
3. The remaining six hours will be selected from the following recommended courses:  
 ANTH 4513 African Religions: Gods Witches and Ancestors  
 HIST 3443 Modern Imperialism  
 HIST 3253 The History of Sub-Saharan Africa  
 HIST 4563 The Old South 1607-1865  
 HIST 4573 The New South, 1860 to Present  
 SOCI 3043 Contemporary Caribbean  
 SOCI 4073 Peoples of East Africa  
 SOCI 4123 Black Ghetto  
 WLIT 4993 African Literature  
 And selected Special Topics/Special Studies courses with approval from AAST adviser;
4. No course can be counted both for African-American Studies and the departmental major.

With careful advising, a combined major of African-American Studies and majors other than those listed may be developed to meet student needs. Members of the African-American Studies Committee and interdepartmental committee are Charles Robinson (chair), history; Yimisi Jimo, English; Gordon Morgan, sociology; Charlene Johnson, education; JoAnn D'Alisera, anthropology; John Newman, art; and Carl Riley, arts and sciences.

**Requirements for a Minor in African-American Studies:** HIST 3233, HIST 3243 and one of the following ANTH 4513, ANTH 4583, or SOCI 4073. In addition, at least 6 hours of approved elective courses. Interested students should consult with the African-American Studies Chairman for selection of appropriate classes.

Students desiring further information may consult with Associate Professor Robinson of the history department.

SEE PAGE 310 FOR AFRICAN AMERICAN STUDIES (AAST) COURSES

### AMERICAN STUDIES (AMST)

Robert B. Cochran  
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 506 Old Main  
 479-575-7708  
<http://www.uark.edu/misc/carsinfo/major.htm>  
[rcochran@uark.edu](mailto:rcochran@uark.edu)

The J. William Fulbright College of Arts and Sciences has a long-established commitment to the study of American cultures. Virtually every department offers courses centered on various aspects of human experience on the North American continent. The American Studies major promotes interdisciplinary approaches to these fields and provides substantial flexibility for students wishing to design tightly focused or highly individualized courses of study.

**Requirements for a Major in American Studies:** The American Studies major program requires 27 semester hours, which must include the following:

1. Three hours Introduction to American Studies, AMST 2003.
2. Three hours of American history, HIST 2003 or HIST 2013. (Students must also complete PLSC 2003 to satisfy the University requirement.)
3. Three hours of American literature, (Papers submitted in this course will fulfill the Fulbright College writing requirement.)
4. Eighteen hours to be selected from the following courses, with the selection to include:
  - a. At least one of the following:  
 ARCH 4483, ARHS 4913, ARHS 4923, COMM 4143, COMM 4353, COMM 4383, COMM 4883, MUHS 4253
  - b. At least one of the following:  
 ANTH 3213, ANTH 3253, GEOG 3343, GEOG 4063, SOCI 3033, SOCI 3193, SOCI 3253
  - c. At least one of the following:  
 PLSC 3153, PLSC 3853, PLSC 3933, PLSC 4203
  - d. Nine hours in the chosen area of concentration. Sample areas of concentration include the following:  
**African-American Culture** – selections from:  
 HIST 3233, PLSC 4243, SOCI 3033, SOCI 4123, and other approved courses.  
**Contemporary Politics** – selections from:  
 COMM 4383, HIST 4733, PLSC 3973, SOCI 3153, and other

approved courses.

**Gender Issues** – selections from:

ENGL 3923H, and other approved courses.

**Native American Culture** – selections from:

ANTH 3213, ANTH 3263,

HIST 3263, and other approved courses.

**Southern Culture** – selections from:

ENGL 3923H, HIST 4563, HIST 4573,

and other approved courses

**Western or Frontier Studies** – selections from:

HIST 3383, HIST 4463, PLSC 3223,

and other approved courses

**Requirements for the Major in American Studies with Emphasis on Regional Studies:** Students wishing to major in American Studies with emphasis on regional studies may complete requirements (1), (2), (3), and (4) as all majors. They must also complete ANTH or SOCI 3253 to satisfy requirement (4A) and PLSC 3223 to satisfy requirement (4C). Either HIST 4563, or HIST 4573 must also be completed in satisfying requirement (4D). These requirements total nine hours, leaving six elective hours to complete requirement (4D).

#### American Studies Eight-Semester Degree Program:

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional BA Core Requirement Areas (core areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core course.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
3	HIST 2003 History of the Am People to 1877 or HIST 2013 History of the Am People 1877-present
3	AMST 2003 Intro to Am Studies or Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Total Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3	†MATH 2043, 2053, 2183, 2554 or Core from areas a, b, c, d or e (as needed)
3	PLSC 2003 American National Government (meets core in area b)
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	AMST 2003 Intro to Am Studies (if needed) or Core from areas a, b, c, d or e (as needed)
3	†‡Course from Group 1, 2, 3 or 4 below (as needed)
3	†American Literature Course or Core from area a, b, c, d or e (as needed)
3	Core from area a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	†‡Course from Group 1, 2, 3 or 4 below (as needed)
3	†‡Course from Group 1, 2, 3 or 4 below (as needed)
3	Core from area a, b, c, d or e (as needed)

3	Core from area a, b, c, d or e (as needed)
3	Core from area a, b, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
<b>Fall Semester Year 3</b>	
3	†‡Course from Group 1, 2, 3 or 4 below (as needed)
3	†‡Course from Group 1, 2, 3 or 4 below (as needed)
3	†American Literature Course (if needed) or Core from area a, b, c, d or e (as needed)
3	Core from area a, b, c, d or e (as needed)
3	†Core from area g (if needed) or †Advanced Level Elective
1	General Elective
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
3	†‡Course from Group 1, 2, 3 or 4 below (as needed)
3	†‡Upper Level Fulbright College Elective
3	†American Literature Course (if needed) or General Elective
3	†Core from area g (if needed) or †Advanced Level Elective
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	†‡Upper Level Fulbright College Elective
3	Core from area a, b, c, d or e (as needed)
3	Core from area a, b, c, d or e (as needed)
3	Core from area a, b, c, d or e (as needed)
3	†Advanced Level Elective
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3	†‡Upper Level Fulbright College Elective
3	Core from area a, b, c, d or e (as needed)
3	Core from area a, b, c, d or e (as needed)
3	†Advanced Level Elective
3	General Elective
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

The following groups are referenced in the eight-semester plan above.

**Group 1**

- ARCH 4483 Architecture of the Americas
- ARHS 4913 American Art to 1900 (ARHS 2923)
- ARHS 4923 American Art since 1900 (ARHS 2923)
- COMM 4143 American Film Survey
- COMM 4353 American Public Address (Jr. Standing)
- COMM 4383 Rhetoric of the Modern American Presidency
- COMM 4883 Television and American Culture (COMM 2333)
- MUHS 4253 Special Topics in Music History (MUHS 3703 & 3713)

**Group 2**

- ANTH 3213 Indians of North America
- ANTH 3253 Cultures of the South
- GEOG 3343 Natural Regions of North America
- GEOG 4063 Urban Geography (Jr. Standing)
- SOCI 3033 American Minorities (SOCI 2013)
- SOCI 3193 Race, Class, and Gender in America (SOCI 2013)
- SOCI 3253 Cultures of the South

**Group 3**

- PLSC 3153 Public Policy (PLSC 2003)
- PLSC 3853 American Foreign Policy (PLSC 2003 or 2013)
- PLSC 3933 Contemporary American Political Thought
- PLSC 4203 American Political Parties (PLSC 2003)

**Group 4**

At least 9 hours must be chosen from one of the following concentrations (or another approved by the director):

African American Studies

- HIST 3233 African American History to 1877
- PLSC 4243 Minority Politics
- PLSC 4263 Supreme Court & Civil Rights
- SOCI 3033 American Minorities
- SOCI 4123 The Black Ghetto

Contemporary Politics

- COMM 4383 Rhetoric of the American Presidency
- HIST 4733 Recent America, 1941 to present
- PLSC 3973 Twentieth Century Political Thought
- SOCI 3153 Urban Sociology

Gender Issues

- ENGL 3923H Honors Colloquium (Honors)

Native American Culture

- ANTH 3203 American Indians Today
- ANTH 3213 Indians of North America
- ANTH 3263 Indians of Arkansas and the South
- HIST 3263 History of the American Indian

Southern Culture

- ENGL 3923H Honors Colloquium
- HIST 4563 The Old South, 1607-1865
- HIST 4573 The New South, 1865-present

Western or Frontier Studies

- HIST 3383 Arkansas and the Southwest
- HIST 4463 The American Frontier
- PLSC 3223 Arkansas Politics

**Requirements for the Certificate in American Studies for International Students Not Seeking a University of Arkansas Degree:** International students not seeking a University of Arkansas degree may receive a certificate in American Studies by completing requirements (2) and (3), plus completing a total of twelve hours in any combination from the courses listed under requirement (4). This represents a total of 18 hours.

**Requirements for Departmental Honors in American Studies:** The Departmental Honors Program in American Studies offers junior and senior students the opportunity to enroll in enriched courses and to conduct independent research. In addition to satisfying all other requirements for the major, honors candidates must complete at least 12 hours of honors work, including six in honors essay. The Honors Program in American Studies requires a total of 33 hours in addition to University and college requirements.

SEE PAGE 314 FOR AMERICAN STUDIES (AMST) COURSES.

**ANTHROPOLOGY (ANTH)**

Peter S. Ungar  
 Chair of the Department  
 330 Old Main  
 479-575-2508  
<http://www.uark.edu/depts/anthinfo/>  
[anth@uark.edu](mailto:anth@uark.edu)

- University Professor Limp
- Professors Early, Green, Kay, Kvamme, Mainfort, Rose, Sabo, Schneider (M.J.), Swedenburg, Ungar
- Professors Emeriti Davis, Hoffman (Michael), McGimsey
- Associate Professors D'Alisera, Erickson, Plavcan
- Associate Professor Emeritus Schneider (W.)
- Assistant Professors Casana, Nolan
- Assistant Professor Emeritus Hoffman (Margaret)

Courses in anthropology provide an introduction to world peoples, their ways of living, and world views. Anthropology helps students to better understand human similarities and differences.

**Requirements for a Major in Anthropology:** 30 semester hours including ANTH 1013, ANTH 1011L, ANTH 1023, ANTH 3023, ANTH 3021L, and ANTH 4013.

**Writing Requirement:** The Fulbright College research/analytical paper requirement for anthropology majors is fulfilled in ANTH 4013.

**Requirements for Departmental Honors in Anthropology:** The Departmental Honors Program in Anthropology provides an opportunity for outstanding undergraduate majors to conduct independent research under the supervision of a faculty member. The research project culminates in an honors thesis, which is primary for the award “Anthropology Scholar *Cum Laude*.” Higher degree distinctions are recommended only in truly exceptional cases and are based upon the candidate’s entire program of honors studies.

Honors candidates must meet the college requirements for an honors degree. They must complete and defend an honors thesis and take 12 hours, which may include 6 hours of thesis, in Honors Studies. The candidate is expected to maintain a minimum 3.5 cumulative grade-point average in anthropology and other course work.

**Anthropology Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
3	ANTH 1023 Introduction to Cultural Anthropology
3	Core from areas a, b, c, d or e
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3	†MATH 2043, 2053, 2183, 2554 or Core from areas a, b, c, d or e (as needed)
4	ANTH 1013/1011L Introduction to Biological Anthropology and Laboratory
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
4	‡†ANTH 3023/3021L Approaches to Archeology and Lab
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	General Elective
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	†Core from area g (if needed) or †Advanced Level Elective
3	‡†ANTH Upper Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	General Elective
<b>15</b>	<b>Semester Hours</b>

Fall Semester Year 3	
3	‡†ANTH Upper Level Elective
3	‡†ANTH Upper Level Elective
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
3	General Elective
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	‡†ANTH Upper Level Elective
3	† Core from area g (if still needed) or †Advanced Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	‡†ANTH 4013 History of Anthropological Thought
3	‡†ANTH Upper Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	†Advanced Level Elective
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	‡†ANTH Upper Level Elective
3	†Advanced Level Elective
3	†Advanced Level Elective
3	General Elective
3	General Elective
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Requirements for a Minor in Anthropology:** 15 hours including ANTH 1023. At least 9 hours must be in courses numbered 3000 or above. Students who minor in anthropology should consult with an anthropology adviser to select appropriate courses. A student must notify the department of his or her intent to minor.

**Requirements for a Combined Major in Anthropology/Sociology:** 36 hours with a minimum of 15 hours in each subject, to include SOCI 2013, SOCI 3303 (or a course in statistics), SOCI 3313, and SOCI 4023 and ANTH 1013, ANTH 1011L, ANTH 1023, ANTH 3023/3021L, and ANTH 4013. Additional courses are to be selected in consultation with a representative of the field concerned.

**Anthropology/Sociology Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
3	ANTH 1023 Introduction to Cultural Anthropology
3	Core from areas a, b, c or d (as needed)



3	Core from areas a, b, c or d (as needed)
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 1</b>	
3	ENGL 1023 Composition II
4	ANTH 1013/1011L Introduction to Biological Anthropology and Lab
3	SOCI 2013 General Sociology
3	†MATH 2043, 2053, 2183 or 2554 or Core from areas a, b, c, or d (as needed)
3	Core from areas a, b, c or d (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 2</b>	
4	‡†ANTH 3023/3021L Approaches to Archaeology and Lab
3	Core from areas a, b, c or d (as needed)
3	Core from areas a, b, c or d (as needed)
3	Core from areas a, b, c or d (as needed)
3	General Elective
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 2</b>	
3	‡†SOCI or ANTH 3000-4000 Level Elective
3	†Core from area g (if needed) or †Advanced Level Elective
3	Core from areas a, b, c or d (as needed)
3	Core from areas a, b, c or d (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 3</b>	
4	‡†SOCI 3303/3301L Social Data & Analysis and Lab
3	†Core from area g (if needed) or †Advanced Level Elective
3	Core from areas a, b, c or d (as needed)
3	Core from areas a, b, c or d (as needed)
2	General Elective
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
3	‡†SOCI 3313 Social Research
3	‡†SOCI or ANTH 3000-4000 Level Elective
3	Core from areas a, b, c or d (as needed)
3	Core from areas a, b, c or d (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	‡†ANTH 4013 History of Anthropological Thought
3	‡†SOCI 4023 Social Theory
3	Core from areas a, b, c or d (as needed)
3	General Elective
3	General Elective
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3	‡†ANTH 3000-4000 Level Elective
3	†Advanced Level Elective
3	†Advanced Level Elective
3	General Elective
3	General Elective
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

† Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter

‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Cartography/Remote Sensing/GIS Specialization:** This program gives students an opportunity to develop expertise in (1) cartography, map design and computer-assisted map production, (2) remote sensing and image interpretation, including photographic systems, sensor systems, and digital image processing, and (3) geographic information systems, including data sources, analytical techniques, and hardware/software systems.

To complete the specialization, a student is required to fulfill certain course requirements.

Required Courses (9 hours):

GEOG 3023, GEOS 4413, and GEOS 3543 (same as ANTH 3543)

Elective Courses (9 hours to be selected from the following):

GEOG 4523, GEOL 5423, GEOG 4553 (same as ANTH 4553),

GEOG 4563 (same as ANTH 4563), GEOG 4573 (same as ANTH 4573), GEOG 4593 (same as ANTH 4593), STAT 4003

(or other approved statistics course), CVEG 2053 (or other approved surveying course), CENG 4883

For the combined major in Anthropology and African-American Studies, see the African-American Studies listing.

For requirements for the M.A. and Ph.D. degrees in anthropology, see the *Graduate School Catalog*.

SEE PAGE 315 FOR ANTHROPOLOGY (ANTH) COURSES.

## ART (ARTS)

Lynn F. Jacobs

Chair of the Department

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- Professors Jacobs, Peven
- Professor Emeriti Brody, Harington, Ross, Stout
- Associate Professors Golden, Hulén, La Porte, Musgnug, Nelson, Newman
- Assistant Professors Hapgood, Springer
- Visiting Assistant Professor Swartwood
- Instructor Jones
- Adjunct Assistant Professor Kaminsky

## Bachelor of Arts Degree

Transfer students should confer with the chairperson of the department prior to entrance for information concerning entrance requirements and transfer credits.

### Requirements for a Major in Art with a Concentration in Studio Art:

A minimum of 43 semester hours, including ARTS 1313, ARTS 1323, ARTS 1013, ARTS 2013, ARTS 2313, ARTS 4921, and at least 12 hours in art history/criticism to include: ARHS 2913 (Survey I) and 2923 (Survey II); one course from ARHS 4833 (Ancient), ARHS 4843 (Medieval), ARHS 4853 (Italian Renaissance), ARHS 4863 (Northern Renaissance), ARHS 4873 (Baroque); and one course from ARHS 4883 (19th Century European), ARHS 4893 (20th Century European), ARHS 4913 (American Art to 1900), ARHS 4923 (American Art Since 1900), ARHS 4813 (History of Photography), ARHS 4823 (History of Graphic Design). In addition to the freshman year block of courses, the art major must complete a minimum of three semesters in one specialty area of art and a minimum of two semesters in a second area. Areas of selection are drawing, painting, sculpture, printmaking, ceramics, photography, and visual design. An exhibition of creative work of each student is required before commencement. No art major may present ARTS 1003 or ARHS 1003, or any other art course, to satisfy the college fine arts requirement.

### Art B.A. with a Concentration in Studio Art Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the

program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Primary concentration requires 9 hours in one area chosen from ceramics, drawing, visual design, painting, photography, printmaking or sculpture.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	MATH 1203 (if required) or †MATH 2043, 2053, 2183 or 2554
3	ARTS 1013 Drawing Fundamentals 1 or ARTS 1313 2-Dimensional Design
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3	†MATH 2043, 2053, 2183 or 2554 or Core from areas a, b, c, d or e (as needed)
3	ARTS 1013 Drawing Fundamentals 1 or ARTS 1313 Two-Dimensional Design (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	‡ARTS 2013 Figure Drawing 1 or ARTS 1323 Three-Dimensional Design
3	ARHS 2913 Art History Survey 1
3	ARTS 2313 Computer Applications in Art
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	†Core from area g (if needed) or †Advanced Level Elective
3	‡ARTS 2013 Figure Drawing 1 or ARTS 1323 Three-Dimensional Design (as needed)
3	ARHS 2923 Art History Survey 2
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 3	
3	‡†ARTS primary or secondary concentration
3	‡†Upper Level ARHS Group 1 or 2 (below)
3	Core from areas a, b, c, d or e (as needed)
4	Core from areas a, b, c, d or e (as needed)
3	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	‡†ARTS primary or secondary concentration
3	‡†ARHS Upper Level Group 1 or 2 (below, as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	‡†ARTS primary or secondary concentration
3	‡†ARTS primary or secondary concentration
3	‡†Upper Level ARSC Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 4	
1	‡†ARTS 4921 Senior Portfolio Review

3	‡†ARTS primary or secondary concentration
3	‡†Upper Level ARSC Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a,b,c,d or e (as needed)
3	†Advanced Level Elective
<b>16</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

Upper Level ARHS Group 1. Choose one course from:

- ARHS 4833 Ancient Art
- ARHS 4843 Medieval Art
- ARHS 4853 Italian Renaissance Art
- ARHS 4863 Northern Renaissance Art
- ARHS 4873 Baroque Art

Upper Level ARHS Group 2. Choose one course from:

- ARHS 4813 History of Photography
- ARHS 4823 History of Graphic Design
- ARHS 4883 19th Century European Art
- ARHS 4893 20th Century European Art
- ARHS 4913 American Art to 1900
- ARHS 4923 American Art since 1900

**Requirements for a Major in Art with a Concentration in Art History/Criticism:** A minimum of 39 semester hours, including ARTS 1013, ARTS 1313 or ARTS 1323, ARHS 2913 and ARHS 2923. In addition to the preceding requirements, three courses selected from ARHS 4833, ARHS 4843, ARHS 4853, ARHS 4863, ARHS 4873, and ARHS 4983; and three courses selected from ARHS 4813, ARHS 4883, ARHS 4893, ARHS 4913, ARHS 4923, and ARHS 4933. In addition, ARHS 4963 (Individual Research in Art History), one seminar course in art history or art criticism, and one elective course in art history or studio art. No art major may present ARHS 1003 or ARTS 1003, or any other art course, to satisfy the college fine arts requirement.

**Art B.A. with a Concentration in Art History/Criticism Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	MATH 1203 (if required) or †MATH 2043, 2053, 2183 or 2554
3	ARHS 2913 Art History Survey 1
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3	†MATH 2043, 2053, 2183 or 2554 or Core from areas a, b, c, d or e (as needed)
3	ARHS 2923 Art History Survey 2

3	ARTS 1013 Drawing Fundamentals 1
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 2</b>	
3	ARTS 1313 Two-Dimensional Design or ARTS 1323 Three-Dimensional Design
3	‡†Upper Level Art History Group 1 or 2 (below)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 2</b>	
3	‡†Upper Level Art History Group 1 or 2 (below)
3	†Core from area g (if needed) or †Advanced Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
<b>Fall Semester Year 3</b>	
3	‡†Upper Level Art History Group 1 or 2 (below, as needed)
3	†Core from area g (if needed) or †Advanced Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
3	‡†Upper Level Art History Group 1 or 2 (below, as needed)
3	‡†Upper Level Art Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
14	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	‡†ARHS 4943 Seminar in Art Criticism
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Upper Level Art History Group 1 or 2 (below, as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3	‡†ARHS 4963 Individual Research in Art History
3	‡†Upper Level ARSC Elective
3	†Advanced Level Elective
3	†Advanced Level Elective
3	Upper Level Art History Group 1 or 2 (below, as needed)
1	General Elective
<b>16</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

† Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter

‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

Upper Level ARHS Group 1. Choose two courses from:

- ARHS 4833 Ancient Art (ARHS 2913)
- ARHS 4843 Medieval Art (ARHS 2913)
- ARHS 4853 Italian Renaissance Art (ARHS 2923)
- ARHS 4863 Northern Renaissance Art (ARHS 2923)
- ARHS 4873 Baroque Art (ARHS 2923)
- ARHS 4983 Special Topics in Art History

Upper Level ARHS Group 2. Choose two courses from:

- ARHS 4813 History of Photography
- ARHS 4883 19th Century European Art (ARHS 2923)
- ARHS 4893 20th Century European Art (ARHS 2923)

ARHS 4913 American Art to 1900 (ARHS 2923)

ARHS 4923 American Art since 1900 (ARHS 2923)

ARHS 4993 Special Topics in Modern Art

**Requirements for a Minor in Art History/Criticism:** A minimum of 18 semester hours to include ARTS 1013, ARHS 2913, ARHS 2923, and three additional art history courses exclusive of seminars. A student must notify the department of his or her intent to minor. The minor is especially suit to students majoring in anthropology, English, foreign languages, history, philosophy, and music.

**Requirements for Departmental Honors in Art:** As part of the Honors Studies Program of the J. William Fulbright College of Arts and Sciences, the department of art provides the opportunity for academically superior junior- and senior-level students to acquire broader and deeper knowledge and skills in the visual arts and related disciplines. This is accomplished through independent research projects in studio art and/or art history under the direction of the art faculty. Outstanding achievement is recognized by awarding the distinction “Art Scholar *Cum Laude*.” Students may apply for honors studies beginning in the second semester of their sophomore year and normally will not be accepted into the program after completion of the second semester of their junior year. The department requires each applicant to have a minimum cumulative grade-point average of 3.5 in all college course work, a minimum grade-point average of 3.5 in all course work taken in the department of art, completed ARHS 2913 and ARHS 2923, completed at least 20 semester hours of work in art department courses, and at least 30 semester hours of general education requirements. Included in those hours, a student must complete and defend an honors thesis and take 12 hours, which may include 6 hours of thesis, in honors studies. Higher degree distinctions take into consideration the student’s entire academic career and are recommended for only those students whose honors projects and programs of study demonstrate a truly exceptional degree of creativity and scholarship.

### Bachelor of Fine Arts Degree

**Admission:** Students earning a grade-point average of 3.00 or higher in art, after the completion of ARTS 1013, 1313, and 1323, and who have maintained an overall grade-point average of 2.00 are eligible to make application to the B.F.A. degree program. In addition to meeting the required grade-point average, all students must submit, as part of their application, a portfolio of current representative work for evaluation by the art faculty. Acceptance into the B.F.A. program is contingent upon favorable evaluation by the art faculty of the applicant’s portfolio. Upon acceptance into the B.F.A. degree program, each student will be assigned a major adviser for the purpose of completing a degree plan, which must meet departmental approval.

After entry into the B.F.A. program, the student is required to complete two semesters with a minimum of three credit hours of course work in their major studio area each semester.

Transfer credit will be allowed from other accredited and recognized art departments if the credit earned is compatible with program and course requirements within the UA art department and reflects a grade of “C” or higher. This department will not accept more than 50 percent of the required B.F.A. professional degree credits from another institution.

**Degree Requirements:** The Bachelor of Fine Arts degree will be awarded to students, who, upon the completion of the approved program, have maintained a 3.00 grade-point average within the UA art department and a 2.00 grade-point average overall. Students in the B.F.A. program whose grade point average falls below 3.0 in art classes for two consecutive semesters will be dismissed from the B.F.A. program. A faculty-supervised critique of the work of each student, once each semester in the program, is required. A senior review and exhibition will be required prior to the granting of the degree.

**Off-campus Study Requirement:** Each student is required to complete an

approved off-campus study experience each semester in the program. This may involve a field trip to an urban center that includes visits to major art collections.

**Requirements for the Bachelor of Fine Arts Degree with a Concentration in Studio Art:** A minimum of 84 semester hours including ARTS 1013, ARTS 1313, ARTS 1323, ARTS 2003, ARTS 2013, ARTS 2313, ARTS 3333, ARTS 3023 or ARTS 4343, ARTS 4921, PHIL 4403, plus a minimum of 18 semester hours in the selected studio major, a minimum of 23 semester hours in art electives (must include a minimum of one course in each of the following areas: painting, sculpture, printmaking, visual design, photography, and ceramics. Up to six credit hours may be taken outside of the department with approval), and at least 15 semester hours in art history including ARHS 2913, ARHS 2923, and ARHS 4943.

**Art B.F.A. with a Concentration in Studio Art Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.F.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 201 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

ARTS Electives must include at least one course in each of the following media areas: painting, sculpture, printmaking, visual design, photography, and ceramics.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	MATH 1203 College Algebra
3	ARTS 1013 Drawing Fundamentals 1
3	ARTS 1313 Two-Dimensional Design or ARTS 1323 Three-Dimensional Design
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3	Core from areas a, b, c, d or e (as needed)
0-3	Core from areas a, b, c, d or e (needed only if starting at 1003 level in foreign language)
3	†ARTS 2013 Figure Drawing or †‡Arts Primary Studio Concentration 1
3	ARTS 1313 2-Dimensional Design or ARTS 1323 3-Dimensional Design (as needed)
3	ARTS 2313 Computer Applications in Art
<b>15-18</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	ARTS Elective
3	†ARTS 2013 Figure Drawing (if needed) or †‡Arts Primary Studio Concentration 1
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	†Core from area g (if required; may also take in semester 6) or ARTS Elective
3	ARHS 2913 Art History Survey I
<b>18</b>	<b>Semester Hours</b>
APPLY FOR B.F.A. DEGREE PROGRAM MUST BE ACCEPTED INTO B.F.A. PROGRAM TO CONTINUE	
Spring Semester Year 2	
3	†Advanced Foundations Course
3	ARTS Elective
3	†‡ARTS Primary Studio Concentration 2
4	Core from area f
3	ARHS 2923 Art History Survey II
<b>16</b>	<b>Semester Hours</b>

Fall Semester Year 3	
3	†‡Advanced Foundations Course (below)
3	†‡ARTS Primary Studio Concentration 3
3	ARTS Elective
3	†‡ARHS Art History upper level
3	Core from area a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>18</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	†‡ARTS Primary Studio Concentration 4
3	ARTS Elective
3	†‡Advanced Foundations Course (below) or ARTS Upper-Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	†‡ARHS Art History upper level
3	†Core from area g (if needed) or ARTS Elective
<b>18</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	†‡ARTS Primary Concentration 5
3	ARTS Elective or Advanced Foundations Course (below, if needed)
3	†‡ARHS 4943 Seminar in Art Criticism
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	ARTS Elective (may be in primary area)
3	†‡ARTS Primary Studio Concentration 6
1	†‡ARTS 4921 Senior Portfolio Review
3	†‡PHIL 4403 Philosophy of Art
3	ARTS Elective (if needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Advanced Foundation Courses:**

- ARTS 2003 Drawing Fundamentals II (Fall and Spring)
- ARTS 3333 Color Studies (Fall)
- ARTS 3023 Drawing III (Fall) or ARTS 4343 Advanced Design (Spring)

**Requirements for the Bachelor of Fine Arts Degree with a Concentration in Art Education:** A minimum of 64 hours to include ARTS 1013, ARTS 1313, ARTS 1323, ARTS 2003, ARTS 2013, ARTS 2313, ARTS 3333, ARTS 3023 or ARTS 4343, and ARTS 4921, PHIL 4403, a minimum of 12 hours in a selected studio major and 6 hours in a selected studio minor, at least 12 hours in art history including ARHS 2913, ARHS 2923, and ARHS 4943, at least 6 hours of 3000- or 4000-level studio art electives exclusive of the studio major and minor.

Students who wish to apply for admission to the internship program in art education must complete the following Stages.

**Stage I:** Complete an evaluation for internship. Students must also meet the following criteria to be cleared for the internship:

1. Declare the major in art education in the Fulbright Advising Center, 518 Old Main.
2. Successful completion of the PRAXIS I test by meeting or exceeding the Arkansas Department of Education cut-off scores. This test should be taken after the student has completed 30 credit hours and upon completion of ENGL 1013, ENGL 1023, and MATH 1203.
3. Obtain a “C” or better in the following pre-education core courses: CIED 1002, CIED 1011, CIED 3023, CIED 3033, ETEC 2001, ETEC 2002L.

4. Obtain a "C" or better in ARED 3613, ARED 3643, ARED 3653.
5. Satisfactory completion of the Evaluation for Internship form. The evaluation form must be completed by October 1 prior to doing a fall internship or March 1 prior to doing a spring internship. This form is available at [http://coehp.uark.edu/Evaluation\\_for\\_Art\\_Internship.doc](http://coehp.uark.edu/Evaluation_for_Art_Internship.doc).

The completed form must be returned to the Coordinator of Teacher Education, 8 Peabody Hall, no later than the stated deadline.

6. Complete the B.F.A. degree with a cumulative GPA of 2.50 or higher. The degree must be posted to your University of Arkansas transcript at the Registrar's Office prior to internship.
7. Obtain departmental clearance for internship based on successful completion of portfolios, evaluation for internship, GPA requirements, course work requirements, selected written recommendations, an interview, and/or other requirements specified by your program.

8. Complete licensure packet available from the Coordinator of Teacher Education, Peabody Hall Room 8.

All requirements in Stage I must be met to be cleared for the internship. Please contact the Coordinator of Teacher Education, 8 Peabody Hall, College of Education and Health Professions for more information.

### Stage II: Internship

1. Complete the one-semester internship at an approved site in Washington or Benton counties.
2. Complete Praxis II requirements. See your adviser for completion dates.

NOTE: Students should always consult the Coordinator of Teacher Education for any licensure requirement changes. Students will not be licensed to teach in Arkansas until they have met all requirements for licensure as set forth by the Arkansas Department of Education.

Usually licensure in another state is facilitated by qualifying for a license in Arkansas. An application in another state must be made on the application form of that state, which can be obtained by request from the State Teacher Licensure office in the capital city. An official transcript should accompany the application. In many instances the applications are referred to the Coordinator of Teacher Education to verify program completion in teacher education.

**Writing Requirement:** The Fulbright College research/analytical writing requirement for art majors, B.A. and B.F.A. degrees, will be fulfilled in art history courses ARHS 4833, ARHS 4843, ARHS 4853, ARHS 4863, ARHS 4873, ARHS 4943, ARHS 4963, and ARHS 4973. It also may be an honors thesis in art history (only).

### Art B.F.A. with a Concentration in Art Education Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.F.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 201 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

ARTS Electives exclusive of the studio major and minor to be selected from ARTS 3103, ARTS 3203, ARTS 3363, ARTS 3463, ARTS 3503 or ARTS 3523, ARTS 3803.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	MATH 1203 College Algebra
3	ARTS 1013 Drawing Fundamentals I

3	ARTS 1313 Two-Dimensional Design or ARTS 1323 Three-Dimensional Design
3	Core from areas a, b, c, or d (as needed)
3	Core from areas a, b, c, or d (needed only if starting at 1003 level in foreign language)
<b>15-18</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3	Core from areas a, b, c, or d (as needed)
4	Core from area f (as needed)
3	ARTS 1313 Two-Dimensional Design or ARTS 1323 Three-Dimensional Design (as needed)
3	†ARTS 2013 Figure Drawing or ††ARTS Primary Studio Concentration
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	†ARTS 2013 Figure Drawing (if needed) or ††ARTS Primary Studio Concentration
3	††ARTS Secondary Studio Concentration
3	ARHS 2913 Art History Survey I
3	PSYC 2003 General Psychology
3	Core from areas a, b, c, or d (as needed)
3	Core from areas a, b, c, or d (as needed)
<b>18</b>	<b>Semester Hours</b>
APPLY TO B.F.A PROGRAM	
MUST BE ACCEPTED TO B.F.A. PROGRAM TO CONTINUE	
Spring Semester Year 2	
3	†ARTS Advanced Foundations Course (listed below)
3	††ARTS Primary Studio Concentration
4	Core from area f (as needed)
3	CIED 1002/1011 Introduction to Education
3	ARHS 2923 Art History Survey II
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 3	
3	††ARTS Advanced Foundations Course (listed below)
3	††ARTS Primary Studio Concentration
3	†ARE 3613 Public School Art
3	Core from areas a, b, c, or d (as needed)
3	Core from areas a, b, c, or d (as needed)
3	Core from area g (if required) or Core from areas a, b, c, or d (as needed)
<b>18</b>	<b>Semester Hours</b>
TAKE PRAXIS I EXAM	
Spring Semester Year 3	
3	††ARTS Primary Studio Concentration
3	†ARTS Advanced Foundations Course (listed below)
3	††PHIL 4403 Philosophy of Art
3	†CIED 3033 Classroom Learning Theory
3	Core from areas a, b, c, or d (as needed)
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	ARTS elective (exclusive of studio major and minor)
3	ARTS Secondary Studio Concentration or ARTS Advanced Foundations Course (listed below)
3	††ARHS 4943 Art Criticism
3	†ARE 3643 Teaching Art in Elementary schools
3	†ARTS Advanced Foundations Course (listed below)
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	ARTS elective (exclusive of studio major and minor)
3	ARTS Secondary Studio Concentration (if needed) or ARTS Advanced Foundations Course (listed below)
3	†ARE 3653 Teaching Art in Secondary Schools
1	††ARTS 4921 Senior Portfolio Review
3	†CIED 3023 Survey of Exceptionalities
3	††ARHS advanced elective
<b>16</b>	<b>Semester Hours</b>
<b>129-132</b>	<b>Total Hours</b>

† Meets 40-hour advanced credit hour requirement. See College Academic

Regulations on page 122 of this chapter

‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

#### Advanced Foundations Courses:

ARTS 2003 Drawing Fundamentals II (Fall and Spring)  
 ARTS 2313 Computer Applications in Art (Fall and Spring)  
 ARTS 3333 Color Studies (Fall)  
 ARTS 3023 Drawing III (Fall) or ARTS 4343 Advanced Design (Spring)

Note: In addition to and after completion of the program listed above, for certification, the student must complete an additional 12 hours of Student Teaching in Art, ARTS 476V and take the Praxis II exams (concurrent with enrollment in ARTS 476V).

For requirements for the M.F.A. degree program in art, see the *Graduate School Catalog*.

SEE PAGE 318 FOR ART (ARTS) COURSES

## ARTS AND SCIENCES (ARSC)

Charles H. Adams  
 Chair of Studies  
 525 Old Main  
 479-575-4801

Students may enroll in off-campus programs (ARSC) under special circumstances and with the approval of the Associate Dean of Fulbright College.

SEE PAGE 318 FOR ARTS AND SCIENCES (ARSC) COURSES

## ASIAN STUDIES (AIST)

Ka Zeng  
 Chair of Studies  
 428 Old Main  
 479-575-3356

#### Requirements for the Asian Studies Combined Major:

**Language Competence:** Students must complete CHIN 2013 (or equivalent) or JAPN 2013 (or equivalent). Subject to the approval of the Director of Studies, students with language competence in one language (Chinese or Japanese) may receive some elective credit for competence level courses in the other language. Proficiency in other Asian languages may also satisfy this requirement.

In addition to the above language requirement, students must complete 21 hours in Asia-related courses, subject to the following conditions:

**Colloquium** (3-6 hours): Students must complete at least three hours in the interdisciplinary colloquium, AIST 4003/AIST 4003H. The AIST Colloquium may be repeated, provided the topic is different.

**Electives** (15-18 hours): In addition to the above requirements and the requirements for the departmental major, students must complete 15-18 hours of Asia-related courses (AIST approved electives listed below) subject to the following conditions of distribution:

1. Students must complete 6 hours of history courses;
2. Students must complete 6 hours of social science courses;
3. Courses must be selected from at least three different departments;
4. A maximum of nine hours may be submitted from any one department;
5. In addition, the following may be applied toward the major:

- a. Up to 6 hours of upper-level language courses (such as CHIN 3003, CHIN 3033, CHIN 3103, JAPN 3003, JAPN 3013, JAPN 3033);
- b. Up to 6 hours of credits in an approved study-abroad program;
- c. Up to 6 hours of CHIN or JAPN 3983/3983H (Special Studies)
- d. Other Asia-related courses with approval of the director of Asian Studies

#### Requirements for a Minor in Asian Studies:

Students may earn a minor in Asian Studies by taking courses in art, anthropology, economics, geography, history, languages, sociology, political science, and literature of Asia.

**Language Requirement:** Students must fulfill the Fulbright College requirement in either Chinese or Japanese. At the discretion of the chair of studies, proficiency in other Asian languages may also satisfy this requirement.

Beyond the language requirement, students must complete 15 credit hours of approved courses, including at least three hours in the Asian Studies Colloquium (AIST 4003). The following courses may be taken in fulfillment of the elective requirements:

Approved AIST Electives  
 ECON 3933 Japanese Economic System  
 ECON 4633 International Trade Policy  
 HIST 3503 Far East in Modern Times  
 HIST 4813 History of China to 1644  
 HIST 4823 Modern China  
 HIST 4843 Modern Japan  
 JAPN 4213 Japanese Culture  
 JAPN 4313/4313H Language and Society of Japan  
 MUSY 4113H Honors Ethnomusicology  
 MUSY 4313H Special Topics in Asian and Middle Eastern Musics  
 MUSY 477V/477VH Independent Research in Ethnomusicology  
 PLSC 3503 Government and Politics of East Asia  
 PLSC 4823 Foreign Policy of East Asia

Students may also apply three hours of credit in an approved study-abroad program in an Asian country and three hours of upper-level Chinese or Japanese toward the minor.

Other courses, MGMT 4583, International Management, and Performing Arts of East Asia, may be taken for credit toward the minor with the approval of the chair of Asian Studies.

SEE PAGE 314 FOR ASIAN STUDIES (AIST) COURSES

## BIOLOGICAL SCIENCES (BISC)

Frederick W. Spiegel  
 Chair of the Department  
 601 Science Engineering  
 479-575-3251

<http://biology.uark.edu/>

- University Professors James, Smith (K.)
- Professors Beaupre, Durdik, Etges, Henry, Kral, Rhoads, Spiegel, Walker
- Professors Emeriti Dale, Evans, Johnston, Kilambi, Martin, Meyer, Smith (E.), Talburt
- Research Professors Kremetz, Stephenson
- Associate Professors Brown, Ivey, Lehmann, McNabb, Pinto, Sagers
- Associate Professors Emeriti Bailey, Lane, Wickliff
- Associate Research Professor Magoulick
- Assistant Professors Curtin, Du, Evans-White, Huxel, Lessner, Silberman
- Assistant Research Professors Goforth, Radwell

The Department of Biological Sciences offers a Bachelor of Science degree for those students who seek a degree with a broad background in the life sciences. The B.S. is recommended for students planning to continue their education in basic or applied biology in graduate or professional school. A Bachelor of Arts degree is available for students who do not necessarily plan on a career as a professional biologist but who desire a good foundation in the discipline. Students seeking research experience are invited to participate in the college honors program.

**Requirements for a B.S. Degree with a Major in Biology:** A minimum of 124 hours is required, including 40 hours in the major as specified below.

1. Biology Core (13 hours): Cell Biology (BIOL 2533), General Genetics (BIOL 2323), Evolutionary Biology (BIOL 3023), General Ecology (BIOL 3863) and a minimum of one hour of Core Laboratory selected from Cell Biology Laboratory (BIOL 2531L), General Genetics Laboratory (BIOL 2321L), and General Ecology Laboratory (BIOL 3861L)
2. Bibliographic Practicum (BIOL 2001)
3. An additional 26 hours of electives in biology and/or biology related electives including:
  - a. No more than 8 hours of elective courses at the 1000 level. This includes Principles of Biology. Principles of Biology (BIOL 1543/1541L) is not required for the B.S. major. Well-prepared students, in consultation with their adviser, may opt to begin their coursework with the Core.
  - b. At least 2 elective courses numbered 2000 or higher which are lab courses. This includes Core Labs taken in addition to the basic Core requirement. Courses whose catalog description explicitly excludes them from counting toward the major may not be used to meet this requirement.
  - c. At least 18 hours in courses numbered 3000 or higher, of which at least 12 hours must be from courses numbered 4000 or higher.
  - d. A course meeting the Fulbright College writing requirement. (The means of meeting the writing requirement are listed following the description of Requirements for Departmental Honors in Biology.)

NOTE: Biology related electives that are not taught by the Department of Biological Sciences must be approved using the "Exception Request for Major or Minor Requirements" form.

**Requirements in cognate science and mathematics include the following:**

1. CHEM 1103/1101L (may be completed by advanced placement), CHEM 1123/1121L, CHEM 3603/3601L, CHEM 3613/3611L, CHEM 3813
2. PHYS 2013/2011L, PHYS 2033/2031L or PHYS 2054/2050L, PHYS 2074/2070L
3. MATH 2554 (MATH 2564 is recommended)
4. STAT 2023 or STAT 4003/4001L or equivalent.

### Biology B.S. Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.S. Core Requirement Areas (areas a, b, c, d, e, and f) found on page 203 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area. Students must complete at least 124 hours and this must be considered when scheduling upper-level hours in the senior year.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-5	MATH 1213 or 1285 or †MATH 2554
4	BIOL 1543/BIOL 1541L Principles of Biology and Lab
3-4	CHEM 1103/ (CHEM 1101L optional) University Chemistry I
3	Core from areas a, b, c or e (as needed)
<b>16-19</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3-4	†MATH 2554 or Core from areas a, b, c or e (as needed)
4	CHEM 1123/CHEM 1121L University Chemistry II and Lab
3	Core from areas a, b, c or e (as needed)
1	General Elective
<b>14-15</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3-4	†BIOL 2533 Cell (BIOL 2531L optional)
4	†‡CHEM 3603/CHEM 3601L Organic Chemistry I and Lab
3	Core from areas a, b, c or e (as needed)
4	BIOL lab course 2000-level or above
1	General Elective
<b>15-16</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3-4	†BIOL 2533/ Cell (BIOL 2531L optional) or †BIOL 2323/ Genetics (BIOL 2321L optional)
4	†‡CHEM 3613/ CHEM 3611L Organic Chemistry II and Lab
3	†Core from area f (if needed) or Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
<b>16-17</b>	<b>Semester Hours</b>
Fall Semester Year 3	
3-4	†BIOL 2323/ Genetics (BIOL 2321L optional) or ‡BIOL 3023 Evolutionary Biology
3	†‡CHEM 3813 Introduction to Biochemistry
4	†PHYS 2013/ PHYS 2011L College Physics I and Lab
3	†Core from area f (if needed) or Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
<b>16-17</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3-4	†‡BIOL 3023 Evolutionary Biology (if still needed) or †‡BIOL 3000-4000 Level Elective (below)
3-4	†‡BIOL 3863/ (BIOL 3861L optional) General Ecology
1	BIOL 2001 Bibliographic Practicum
4	†PHYS 2033/ PHYS 2031L College Physics II and Lab
3	Core from areas a, b, c or e (as needed)
<b>14-16</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3-4	†‡BIOL 3000-4000 Level Elective (below)
3-4	†‡BIOL 4000 Level Elective (below)
3	†STATS 2023 Biostatistics
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
<b>15-17*</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3-4	†‡BIOL 4000 Level Elective (below)
3-4	†‡BIOL 4000 Level Elective (below)
3	†‡BIOL 3000-4000 Level Elective (below)
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
<b>15-17*</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

† Meets 40-hour advanced credit hour requirement. See 3 on Graduation Requirements Checklist or see the Catalog of Studies.

‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See 2b on Graduation Requirements Checklist or see the Catalog of Studies.

BIOL 3000-4000 Level Electives are grouped below according to the general subject area. A minimum of 12 hours of 4000-level BIOL electives are required.

**BIOL Botany Group:** (*Pre-requisite requirement in italics*)

BIOL 4104 Taxonomy of Flowering Plants (*BIOL 2323 and BIOL 3023*)

BIOL 4114 Dendrology (*BIOL 3863*)

**BIOL 4304** Plant Physiology (*BIOL 1543/1541L, BIOL 1603/1611L and general chemistry*)

**BIOL 4404** Comparative Botany (*BIOL 2323 and BIOL 2533*)

**BIOL 4424** Mycology (*BIOL 2323 and BIOL 2533*)

**BIOL 4523** Plant Ecology (*BIOL 3863*)

**BIOL 4724** Protistology (*Prerequisite or Corequisite BIOL 3023, Prerequisite BIOL 2323 and BIOL 2533*)

**BIOL: Microbiology Group:** (*Pre-requisite requirement in italics*)

**BIOL 3123** Prokaryote Biology (*BIOL 2533*)

BIOL 4003 Lab in Prokaryote Biology (*BIOL 3123*)

**BIOL 4124** Food Microbiology (*BIOL 2533 and CHEM 1123 and CHEM 1121L or equivalent*)

**BIOL 4233** Genomics and Bioinformatics (*BIOL 4313*)

**BIOL 4313** Molecular Cell Biology (*BIOL 2533 and BIOL 2323, CHEM 3603/3601L and CHEM 3613/3611L*)

**BIOL 4443** Molecular Virology (*BIOL 4233 or BIOL 2323 and BIOL 4753 or 2533*)

**BIOL 4703** Mechanisms of Pathogenesis (*BIOL 2533*)

**BIOL 4713/ 4711L** Basic Immunology (*BIOL 2323 and BIOL 2533*)

**BIOL 4753** General Virology (*BIOL 2533*)

**BIOL 490V** Special Topics in Microbiology

**BIOL: Zoology Group:** (*Pre-requisite requirement in italics*)

**BIOL 3353** Mechanics of Human Movement (*BIOL 2443/2441L*)

**BIOL 4234** Comparative Physiology (*BIOL 2533 and CHEM 3613/3611L*)

**BIOL 4263** Cell Physiology (*BIOL 2533, CHEM 3813 and PHYS 2033*)

**BIOL 4353** Ecological Genetics (*BIOL 2323/2321L, MATH 2554 and STAT 2023 or equiv.*)

**BIOL 4433** Principles of Evolution (*BIOL 2323 and BIOL 3863*)

**BIOL 4463** Physiological Ecology (*BIOL 3863 and BIOL 4234 and its lab component*)

**BIOL 4513/4511L** Population Ecology (*BIOL 3863*)

**BIOL 4554** Developmental Biology (*BIOL 2323 and BIOL 2533*)

**BIOL 4613** Primate Adaptation and Evolution (*BIOL 3023 or ANTH 4613*)

**BIOL 4724** Protistology (*Prerequisite or Corequisite BIOL 3023, Prerequisite BIOL 2533 and BIOL 2323*)

BIOL 4734 Wildlife Management Techniques (*BIOL 3863*)

**BIOL 4743** Fish Biology (*12 hours of BIOL credit*)

**BIOL 4763** Ornithology (*BIOL 3863*)

BIOL 4793 Introduction to Neurobiology (*BIOL 2533*)

**BIOL 4814** Limnology (*BIOL 3863 and CHEM 1123/1121L*)

**BIOL 4833** Animal Behavior (*BIOL 3863*)

**BIOL 4844** Community and Ecosystems (*BIOL 3863*)

**BIOL 485V** Field Ecology (*BIOL 3863*)

**BIOL 490V** Special Topics in Microbiology

**Requirements for a B.A. Degree with a Major in Biology:**

A minimum of 124 hours is required, including:

1. BIOL 1543/1541L. Majors may take additional 1000-level BIOL

courses, but majors may only apply a maximum of eight 1000-level credits toward the major.

2. An additional 24 hours of biological sciences, including:

- a. One course from four of the following six areas of specialization, and at least one course from each of the three general areas of biology: botany, microbiology, zoology

I. Microorganism Biology: BIOL 2533/2531L [lab optional] or BIOL 2013/2011L

II. Genetics: BIOL 2323/2321L or BIOL 4233

III. Morphology: BIOL 4104, BIOL 4404, BIOL 4424, BIOL 3123, BIOL 2404 or BIOL 2814

IV. Physiology: BIOL 4304, BIOL 4313 or BIOL 2213/2211L

V. Evolution: BIOL 3023

VI. Ecology: BIOL 3863/3861L

- b. Bibliographic Practicum BIOL 2001

- c. Remaining 8-10 credit hours of biology electives above the 3000 level

3. Requirements in cognate science and mathematics include:

- a. CHEM 1103/1101L, CHEM 1123/1121L, and either CHEM 2613/2611L/2610D or CHEM 3603/3601L, and CHEM 3613/3611L

- b. PHYS 2013/2011L, PHYS 2033/2031L

- c. MATH 2043 or MATH 2554

**Biology B.A. Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-5	MATH 1213 Plane Trig. or MATH 1285 Precalculus (if needed for MATH 2554) or Core from areas a, b, c, d or e (as needed)
4	BIOL 1543/BIOL 1541L Principles of Biology and Lab
3-4	CHEM 1103/ (CHEM 1101L optional)
1	General Elective (if needed for 15-hour schedule)
15-17	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3-4	† MATH 2043 Survey of Calculus or †MATH 2554 Calculus I
3-4	BIOL 1613/1611L (optional) or Core from areas a, b, c, d or e
4	CHEM 1123/CHEM 1121L
3	Core from areas a, b, c, d or e (as needed)
16-18	<b>Semester Hours</b>
Fall Semester Year 2	
3-4	† BIOL 2013/BIOL 2011L Gen. Micro or BIOL 2533 (BIOL 2531L optional) Cell Biology
4	† BIOL 2213/ BIOL 2211L Human Phys. or BIOL 2323/ BIOL 2321L Gen. Genetics
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
16-17	<b>Semester Hours</b>
Spring Semester Year 2	
3-4	† BIOL 2213/ BIOL 2211L Human Phys. or BIOL 2323/ BIOL 2321L Gen. Genetics
4	CHEM 2613/2611L Organic Physiological Chemistry
3	† Core from area g (if needed) or Core from areas a, b, c, d or e (as needed)



3	Core from areas a, b, c, d or e (as needed)
3	Elective
<b>16-17</b>	<b>Semester Hours</b>
<b>Fall Semester Year 3</b>	
4	† BIOL from Botany group (see below)
3-4	† BIOL 2404/ BIOL 2400L or †‡BIOL 3023 or †‡BIOL 3863/ BIOL 3861L
4	† PHYS 2013/ PHYS 2011L College Physics I
3	† Core from area g (if needed) or Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>17-18</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
3-4	†‡ BIOL 3023 or †‡BIOL 3863/ BIOL 3861L or †‡ BIOL elective (below)
1	BIOL 2001 Bibliographic Practicum
4	† PHYS 2033/ PHYS 2031L College Physics II
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>14-15</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3-4	†‡ BIOL 3000-4000 Level Elective from Microbiology group (below)
3-4	†‡ BIOL 3000-4000 Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15-17*</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3-4	†‡ BIOL 3000-4000 Level Elective from Zoology group (below)
3-4	†‡ BIOL 3000-4000 Level Elective (below)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	†‡ Upper Level Elective in Fulbright College (if needed for 24-hour rule) or General Elective
<b>15-17</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

BIOL 3000-4000 Level Electives are grouped below according to the general subject area. A minimum of 8-10 hours of 3000-4000-level BIOL electives are required and a minimum of one course from each the three general areas must be taken.

**BIOL Botany Group:** (*Pre-requisite requirement in italics*)

- BIOL 4104** Taxonomy of Flowering Plants (*BIOL 2323 and BIOL 3023*)
- BIOL 4114** Dendrology (*BIOL 3863*)
- BIOL 4304** Plant Physiology (*BIOL 1543/1541L, BIOL 1603/1611L and general chemistry*)
- BIOL 4404** Comparative Botany (*BIOL 2323, BIOL 2533*)
- BIOL 4424** Mycology (*BIOL 2323 and BIOL 2533*)
- BIOL 4523** Plant Ecology (*BIOL 3863*)
- BIOL 4724** Protistology (*Prerequisite or Corequisite BIOL 3023, Prerequisite BIOL 2323 and BIOL 2533*)

**BIOL: Microbiology Group:** (*Pre-requisite requirement in italics*)

- BIOL 3123** Prokaryote Biology (*BIOL 2533*)
- BIOL 4003 Lab in Prokaryote Biology (BIOL 3123)
- BIOL 4124** Food Microbiology (BIOL 2533 and CHEM 1123 and CHEM 1121L or equivalent)
- BIOL 4233** Genomics and Bioinformatics (*BIOL 4313*)
- BIOL 4313** Molecular Cell Biology (*BIOL 2533 and BIOL 2323, CHEM 3603/3601L and CHEM 3613/3611L*)

**BIOL 4443** Molecular Virology (*BIOL 4233 or BIOL 2323 and BIOL 4753 or 2533*)

**BIOL 4703** Mechanisms of Pathogenesis (*BIOL 2533*)

**BIOL 4713/ 4711L** Basic Immunology (*BIOL 2323 and BIOL 2533*)

**BIOL 4753** General Virology (*BIOL 2533*)

**BIOL 490V** Special Topics in Microbiology

**BIOL: Zoology Group:** (*Pre-requisite requirement in italics*)

**BIOL 3353** Mechanics of Human Movement (*BIOL 2443/2441L*)

**BIOL 4234** Comparative Physiology (*BIOL 2533 and CHEM 3613/3611L*)

**BIOL 4263** Cell Physiology (*BIOL 2533, CHEM 3813 and PHYS 2033*)

**BIOL 4353** Ecological Genetics (*BIOL 2323/2321L, MATH 2554 and STAT 2023 or equiv.*)

**BIOL 4433** Principles of Evolution (*BIOL 2323 and BIOL 3863*)

**BIOL 4463** Physiological Ecology (*BIOL 3863 and BIOL 4234 and its lab component*)

**BIOL 4513/4511L** Population Ecology (*BIOL 3863*)

**BIOL 4554** Developmental Biology (*BIOL 2323 and BIOL 2533*)

**BIOL 4613** Primate Adaptation and Evolution (*BIOL 3023 or ANTH 4613*)

**BIOL 4724** Protistology (*Prerequisite or Corequisite BIOL 3023, Prerequisite BIOL 2533 and BIOL 2323*)

BIOL 4734 Wildlife Management Techniques (*BIOL 3863*)

**BIOL 4743** Fish Biology (*12 hours of BIOL credit*)

**BIOL 4763** Ornithology (*BIOL 3863*)

BIOL 4793 Introduction to Neurobiology (*BIOL 2533*)

**BIOL 4814** Limnology (*BIOL 3863 and CHEM 1123/1121L*)

**BIOL 4833** Animal Behavior (*BIOL 3863*)

**BIOL 4844** Community and Ecosystem Ecology (*BIOL 3863*)

**BIOL 485V** Field Ecology (*BIOL 3863*)

**BIOL 490V** Special Topics in Microbiology

**Requirements for Departmental Honors in Biology:** The biological sciences honors program is designed to provide students an opportunity to investigate questions in biology through an expanded reading program and research experience. Biological science majors may apply to enter the program between the second semester of the sophomore year and the end of the junior year. Application is made through both Honors Studies (MAIN 517) and the Department of Biological Sciences (SCEN 601). Applicants must have a 3.5 grade-point average. Students should consult with their adviser to identify and contact a potential faculty research mentor. The student's research activities will then be directed by the departmental faculty member who agrees to sponsor the student.

Students may enroll for up to four hours of credit in BIOL 399VH during the junior year and up to eight hours of credit in BIOL 499V during the senior year. A maximum of six of these credits may be applied toward a major. Participants must complete and defend an honors thesis and take 12 hours in Honors Studies, which may include six hours of thesis. The honors thesis is based on an original research project and presented orally before a committee composed of two faculty from the biological sciences, a person from outside the biological sciences, and a representative from the Honors Council. This committee makes a recommendation concerning the award of the honors distinction to the Honors Council. Students who successfully complete the departmental honors program usually graduate as "Departmental Scholar *Cum Laude*." Higher degree distinctions are recommended only in exceptional cases and are based upon the candidate's entire involvement in the honors program. Completion of an honors thesis fulfills the writing requirement in biological sciences, which precludes credit for

BIOL 498V (Senior Thesis) for the same body of work.

**Writing Requirement:** The college writing requirement for majors in biology may be met by one of the following:

1. Completion of an honors thesis,
2. Completion of a senior thesis (BIOL 498V) supervised by a faculty member in biological sciences,
3. Completion of a *required* term paper with a grade of B or above in a BIOL course numbered 3000 or above on a topic approved by the instructor, or
4. Completion of a paper, supervised by a Biological Sciences faculty member, in Special Problems (BIOL 480V)

NOTE: A student exercising Option 3 or 4 may not use the paper written for that option for credit in BIOL 498V.

**Requirements for a Minor in Biology:** Students must take BIOL 1543/1541L, or equivalent, and one course from five of the six areas of specialization outlined in the requirements for a B.A. degree in biology. Students must notify the Fulbright College Dean's Office of their intent to minor in biology using the Program Update form.

**Biology (B.A. or B.S.) Life/Earth Science Teacher Licensure Requirements:** Please refer to the Secondary Education Requirements for Fulbright College Students on page 118.

Students interested in teaching science in middle school should consult with a middle level adviser in the College of Education and Health Professions.

For information on advanced degrees in biology, see the *Graduate School Catalog*.

SEE PAGE 321 FOR BIOLOGY (BIOL) COURSES

## BUSINESS MINOR FOR NON-BUSINESS STUDENTS

The Sam M. Walton College of Business minor requires completion of a minimum of 21 required hours of study (including equivalencies) with at least 50 percent of the courses applied toward the minor taken in residence. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upper level minor requirements must be taken in residence.

Fulbright College students seeking a minor in the Walton College must notify the Fulbright College Dean's Office (MAIN 525).

All students seeking a business minor are required to complete the Walton College computer competency requirement (WCOB 1120) and the following courses:

- ECON 2143 Basic Economics Theory and Practice
  - WCOB 1023 Business Foundations
  - WCOB 1033 Data Analysis and Interpretation or equivalent
- In addition, students must select and complete one of the following concentrations:

### Concentration 1 – General Business

Select 12 hours from the following courses (at least 6 hours must be 3000-4000 level)

- WCOB 1012 Legal Environment of Business
  - WCOB 2013 Markets and Consumers
  - WCOB 2023 Production and Delivery of Goods and Services
  - WCOB 2033 Acquiring and Managing Human Capital
  - WCOB 2043 Acquiring and Managing Financial Resources
- Plus any other 3000- or 4000-level Walton College course

### Concentration 2 – Accounting

- ACCT 3613 Managerial Uses of Accounting Info
- ACCT 3723 Intermediate Accounting I

Plus an additional six hours selected from the following:

- ACCT 3533 Accounting Technology
- ACCT 3753 Intermediate Accounting II
- ACCT 3843 Fundamentals of Taxation

### Concentration 3 – Business Economics

ECON 4333 Economics of Organizations  
Plus an additional 9 hours of 3000- or 4000-level business economics courses

### Concentration 4 - Enterprise Resource Planning

WCOB 2013 Markets and Consumers  
WCOB 2043 Acquiring and Managing Financial Resources  
WCOB 4213 ERP Fundamentals

Plus an additional three hours from the following:

- ISYS 4233 Seminar in ERP Development
- ISYS 4293 Business Intelligence
- WCOB 4223 ERP Configuration and Implementation

### Concentration 5 - Enterprise Systems

ISYS 4453 Introduction for Enterprise Servers  
ISYS 4463 Enterprise Transaction Systems

Plus an additional six hours from the following:

- ISYS 4133 Business Development
- ISYS 4233 Seminar in ERP Development
- ISYS 4293 Business Intelligence
- WCOB 4213 ERP Fundamentals
- WCOB 4223 ERP Configuration and Implementation

### Concentration 6 – Finance

WCOB 2043 Acquiring and Managing Financial Resources  
Plus an additional nine hours of 3000- or 4000-level finance courses.

### Concentration 7 – Information Systems

ISYS 3293 System Analysis and Design  
ISYS 3393 Business Applications and Development Fundamentals  
Plus an additional six hours from the following:

- WCOB 4213 ERP Fundamentals
- WCOB 4223 ERP Configuration and Implementation
- One three hour 4000 level ISYS class

### Concentration 8 – International Business

Select 12 hours from the following:

- ECON 3843 Economic Development, World Bank, and Multilateral Finance
- ECON 3853 Emerging Markets
- ECON 3933 Japanese Economics
- ECON 4633 International Trade Policy
- ECON 4643 International Macroeconomics and Finance
- ECON 4653 Global Competition and Strategy
- ECON 468V International Economics and Business Seminar
- FINN 3703 International Finance
- MGMT 4583 International Management
- MKTG 4633 Global Marketing
- TLOG 4643 International Transportation Logistics

### Concentration 9 – Management

MGMT 4243 Ethics and Corporate Responsibility  
Plus an additional 9 hours of 3000/4000 level management courses (may include WCOB 2033, Acquiring and Managing Human Capital or MGMT 3563, Organizational Behavior)

### Concentration 10 – Marketing

MKTG 3433 Introduction to Marketing Strategy  
Plus an additional 9 hours selected from the following:

- MKTG 4233 Integrated Marketing Communications
- MKTG 3553 Consumer Behavior
- MKTG 3633 Marketing Research
- MKTG 4343 Selling and Sales Mgmt.

MKTG 4633 Global Marketing  
 MKTG 4433 Retail Strategy  
 MKTG 4943 Retail Buying and Merchandise  
 TLOG 3613 Business Logistics

**Concentration 11 – Transportation and Logistics**

TLOG 3443 Principles of Transportation

TLOG 3613 Business Logistics

Plus an additional 6 hours selected from the following:

TLOG 3623 Purchasing and Inventory Systems  
 TLOG 4633 Transportation Carrier Management  
 TLOG 4643 International Transportation & Logistics  
 TLOG 4653 Transportation and Logistics Strategy

In addition to the above course requirements, non-business-degree-seeking students seeking a minor should note the following:

1. Students who elect to obtain a business minor must provide written notice of their intent to minor to the dean's office of the college in which they are receiving a degree. This notice and all requirements for the business minor must be completed prior to the awarding of the student's undergraduate degree.
2. Business minor students must complete all 1000- and 2000-level courses required for the business minor and be a junior- or senior-level student to enroll in 3000- or 4000-level business courses.
3. All specific course prerequisites must be met. Although business minor students are not required to satisfy the entire pre-business core, they must complete the required courses and any other prerequisite course specified prior to enrolling in a 3000/4000-level course.
4. ECON 2143 will substitute for ECON 2013/2023 for prerequisite purposes. In addition, students who take both ECON 2013 (Macroeconomics) and ECON 2023 (Microeconomics) will satisfy the economics requirements of the minor.
5. Business minor students are ineligible to take WCOB 3016 (Business Strategy and Planning).
6. All equivalencies must be approved by the associate dean for academic affairs or designee.

**CHEMISTRY AND BIOCHEMISTRY (CHBC)**

Bill Durham

Chair of the Department

113 Chemistry

479-575-4648

<http://www.uark.edu/depts/cheminfo/uarkchem/>

[cheminfo@uark.edu](mailto:cheminfo@uark.edu)

- Distinguished Professors Gawley, Millett, Pulay, Schäfer, Wilkins
- University Professors Hinton, Koeppe, Sears
- University Professor Emeriti Cordes, Fry
- Professors Davis, Durham, Fritsch, Geren, Peng, Stites
- Professors Emeriti Blyholder, Johnson, Thoma
- Associate Professors Allison, McIntosh, Paul, Sakon
- Assistant Professors Adams, Heyes, Kumar, Tian, Vicic, Zheng
- Adjunct Professor Becker
- Adjunct Associate Professors Edkins, Turnbull

**Requirements for a B.S. degree with a Major in Chemistry:** A minimum of 40 semester hours in chemistry including CHEM 1213/1211L, CHEM 1223/1221L, (or CHEM 1103/1101L, CHEM 1123/1121L), CHEM 2262, CHEM 2272, CHEM 3504, CHEM 3512L, CHEM 3514, CHEM 3703/3702L, CHEM 3713/3712L, CHEM 4123, CHEM 4213/4211L, CHEM 4723, and at least one additional advanced lecture course with 3514

as a prerequisite is required. Students who pass the CHEM 1103 Freshman Chemistry Proficiency Exam and enroll in CHEM 1123/1121L and receive a grade of "C" or better in these courses will also receive credit for CHEM 1103/1101L. A minimum of 18 hours of science outside of chemistry and including mathematics through MATH 2574 and physics through PHYS 2074 are required. These mathematics and physics courses are prerequisites for some advanced courses and should be scheduled early in the student's program. Some work in the biological sciences is recommended. This program meets the minimum requirements for certification by the American Chemical Society if CHEM 3813 (or CHEM 5813/5843) is included. Sample schedules may be obtained from the department of chemistry and biochemistry. Prospective students should consult a departmental adviser.

**Chemistry B.S. Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.S. Core Requirement Areas (areas a, b, c, d, e, and f) found on page 203 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

This program meets the minimum requirements for certification by the American Chemical Society if CHEM 3813 (or CHEM 5813/5843) is included.

**Fall Semester Year 1**

3	ENGL 1013 Composition I
4	†MATH 2554 Calculus I
4	CHEM 1213/1211L Chem for Majors I or CHEM 1103/1101L University Chem I
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
<b>17</b>	<b>Semester Hours</b>

**Spring Semester Year 1**

3	ENGL 1023 Composition II
4	†MATH 2564 Calculus II
4	CHEM 1223/1221L Chem for Majors II or CHEM 1123/1121L University Chem II
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
<b>17</b>	<b>Semester Hours</b>

**Fall Semester Year 2**

4	†MATH 2674 Calculus III
4	†PHYS 2054/2050L University Physics I
5	‡†CHEM 3703/3702L Organic Chemistry I
3	Core from areas a, b, c or e (as needed)
<b>16</b>	<b>Semester Hours</b>

**Spring Semester Year 2**

4	†PHYS 2074/2070L University Physics II
4	‡†CHEM 3713/3712L Organic Chemistry II for majors
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
<b>17</b>	<b>Semester Hours</b>

**Fall Semester Year 3**

4	‡†CHEM 3504 Physical Chemistry I
4	†CHEM 2262/2272 Analytical Chemistry Lecture/Lab
3-4	†BIOL 1543/1541L or Core from area a, b, c, d, or e (as needed)
3	†Core from area f (if needed) or Core from areas a, b, c or e (as needed)
<b>14-15</b>	<b>Semester Hours</b>

Spring Semester Year 3	
6	‡†CHEM 3514/3512L Physical Chemistry II
4	Advanced Level Elective Course
3	Core from area f (if needed) or Core from areas a, b, c or e (as needed)
3	BIOL 1543/1541L (if still needed) or Core from areas a, b, c or e (as needed)
<b>15-16</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	‡†CHEM 4123 Advanced Inorganic Chemistry I
3	‡†CHEM 4723 Experimental Methods in Organic and Inorganic
3	‡†CHEM 3818 Introduction to Biochemistry
3	CHEM elective
3	Core from areas a, b, c or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	‡†CHEM 4213/4211L Instrumental Analysis
3	‡†CHEM 4853 Biochemistry Techniques
9	Elective Courses
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Requirements for a B.S. degree with a Major in Chemistry, Biophysical Option:** A minimum of 43 semester hours in chemistry including CHEM 1213/1211L, CHEM 1223/1221L, (or CHEM 1103/1101L, CHEM 1123/1121L), CHEM 2262, CHEM 2272, CHEM 3504, CHEM 3603/3601L-3613/3611L or CHEM 3703/3702L, CHEM 3713/3712L, CHEM 3514/3512L, CHEM 4213/4211L, CHEM 4853 or completion of a senior thesis based on independent research wherein at least 1 credit hour is earned in CHEM 500V (chemistry research) and/or CHEM 4981 (senior thesis) during each of 3 different semesters, and 6 hours from CHEM 5813-5843 or CHEM 3813-4723, MATH 2554 and MATH 2564, PHYS 2054/2050L and PHYS 2074/2070L, and 11 hours from the biological sciences, to include BIOL 1543/1541L, BIOL 2533/2531L, and one additional lecture course numbered above 3000. The mathematics and physics courses are prerequisites for some advanced courses and should be scheduled early in the student's program.

### Chemistry B.S. Eight-Semester Degree Program with Biophysical Option

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.S. Core Requirement Areas (areas a, b, c, d, e, and f) found on page 203 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
4	CHEM 1103/1101L University Chemistry
4	†MATH 2554 Calculus I
3	Core from areas a, b, c or e (as needed)
<b>14</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
4	†MATH 2564 Calculus II
4	CHEM 1123/1121L University Chemistry II
3	Core from areas a, b, c or e (as needed)

3	Core from areas a, b, c or e (as needed)
<b>17</b>	<b>Semester Hours</b>
Fall Semester Year 2	
4	‡†CHEM 3603/3601L Organic Chemistry I
4	†PHYS 2054/2050L University Physics I
4	BIOL 1543/1541L Principles of Biology
3	Core from areas a, b, c or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 2	
4	‡†CHEM 3613/3611L Organic Chemistry II
4	†PHYS 2074/2070L University Physics II
4	†BIOL 2553/2531L Cell Biology
2	†CHEM 2262 Analytical Chemistry
3	†Core from area f (if needed) or †Advanced Level Elective
<b>17</b>	<b>Semester Hours</b>
Fall Semester Year 3	
2	†CHEM 2272 Analytical Chemistry Lab
4	‡†CHEM 3504 Physical Chemistry I
3	†Core from area f (if needed) or †Advanced Level Elective
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 3	
6	‡†CHEM 3514/3512L Physical Chemistry II
4	‡†CHEM 4213/4211L Instrumental Analysis
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	‡†CHEM 5813 Biochemistry I
3	‡†BIOL 3000/4000 Level Elective
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	‡†CHEM 5843 (4843H) Biochemistry II
3	‡†CHEM 4853 Biochemistry Techniques
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
3	General Elective
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Requirements for a B.S. degree with a Major in Chemistry, Biochemistry Option:** A minimum of 39 semester hours in chemistry including CHEM 1213/1211L, CHEM 1223/1221L (or CHEM 1103/1101L, CHEM 1123/1121L), CHEM 2262, CHEM 2272, either CHEM 3504-3514/3512L or CHEM 3453/3451L, CHEM 3703/3702L, CHEM 3713/3712L, CHEM 4853 or completion of a senior thesis based on independent research wherein at least 1 credit hour is earned in CHEM 500V (chemistry research) and/or CHEM 498V (senior thesis) during each of 3 different semesters, CHEM 5813-5843 or CHEM 3813-4723, and either CHEM 4213/4211L or CHEM 4123, additional required courses to include MATH 2554 and 2564, either PHYS 2013/2011L, PHYS 2033/2031L or PHYS 2054/2050L, PHYS 2074/2070L, and 15 hours of biological sciences to include BIOL 1543/1541L, BIOL 2533/2531L, BIOL 2013/2011L, and either BIOL 4233 or BIOL 2323. The mathematics and physics courses are

prerequisites for some advanced courses and should be scheduled early in the student's program.

### Chemistry B.S. Eight-Semester Degree Program with Biochemistry Option

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.S. Core Requirement Areas (areas a, b, c, d, e, and f) found on page 203 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

This program meets the minimum requirements for certification by the American Chemical Society if CHEM 3813 (or CHEM 5813/5843) is included.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-5	MATH 1213 Plane Trig or MATH 1285 PreCalculus or †MATH 2554 Calculus I
4	CHEM 1213/1211L Chem for Majors I or CHEM 1103/1101L University Chem I
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed) if not taking MATH 1285
<b>15-17</b>	<b>Semester hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
4	†MATH 2554 Calculus I or †MATH 2564 Calculus II
4	CHEM 1223/1221L Chem for Majors II or CHEM 1123/1121L University Chem II
3	Core from areas a, b, c or e (as needed)
3	General Elective
<b>17</b>	<b>Semester hours</b>
Fall Semester Year 2	
3-4	†MATH 2564 Calculus II (if needed) or Core from areas a, b, c or e (as needed)
4	†PHYS 2013/2011L College Physics or †PHYS 2054/2050L University Physics I
5	‡CHEM 3703/3702L Organic Chemistry I for majors
3	Core from areas a, b, c or e (as needed)
<b>15-16</b>	<b>Semester hours</b>
Spring Semester Year 2	
4	†PHYS 2033/2031L College Physics or †PHYS 2074/2070L University Physics II
5	‡CHEM 3713/3712L Organic Chemistry II for majors
4	BIOL 1543/1541L Principles of Biology
2	‡CHEM 2262 Analytical Chemistry Lecture
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 3	
4	‡CHEM 3453/3451L Elements of Physical Chemistry
2	†CHEM 2272 Analytical Chemistry Laboratory
3-4	BIOL 2533/2531L Cell Biology
3	†Core from area f (if needed) or Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
<b>16</b>	<b>Semester hours</b>
Spring Semester Year 3	
3	†Core from area f (if needed) or Core from areas a, b, c or e (as needed)
3-4	‡CHEM 4213/4211L Instrumental Analysis or ‡CHEM 4123 Adv. Inorganic Chem. I
4	BIOL 2013/2011L General Microbiology
3	General Elective
3	Core from areas a, b, c or e (as needed)
<b>16-17</b>	<b>Semester hours</b>

Fall Semester Year 4	
3	‡CHEM 4813H Biochemistry I
3-4	‡BIOL 2323 General Genetics or ‡BIOL 4233 Microbial Genetics
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 4	
3	‡CHEM 4843H Biochemistry II
3	‡CHEM 4853 Biomechanical Techniques
3	Core from areas a, b, c or e (as needed)
3	General Elective
3	General Elective
0-2	General Elective (at least two hours if needed to complete 124-hour requirement)
<b>15-17</b>	<b>Semester hours</b>
<b>124</b>	<b>Total Hours</b>

† Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter

‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

PHYS 2054 Calculus Based University Physics (pre- or co-requisite MATH 2554) and PHYS 2074 (pre- or co-requisite MATH 2564), is a better choice for students interested in graduate school.

**Requirements for a B.S. degree with a Major in Chemistry, International Option:** The B.S. degree with a Major in Chemistry, International Option is designed to allow students from Dublin City College and the University of Regensburg to obtain dual degrees from their home institution and the University of Arkansas, Fayetteville.

Admission requirements: Participants must be pursuing the equivalent of a B.S. degree in Chemistry and be students at Dublin City College or the University of Regensburg. Participants must be pre-approved by the on-site transatlantic dual-degree program coordinator of the home institution. Students must officially apply for admission to the University of Arkansas, present all required academic credentials and meet the requirements for admission of international students as found on page 18. English proficiency is a requirement for students in the Atlantis program. This English proficiency requirement may be met by an of the criteria described in the requirements for admission of international students or by personal interview with the transatlantic dual-degree program coordinator or the coordinator's designee.

A minimum of 40 semester hours in chemistry including CHEM 1213/1211L, CHEM 1223/1221L, (or CHEM 1103/1101L, CHEM 1123/1121L), CHEM 2262, CHEM 2272, CHEM 3504, CHEM 3512L, CHEM 3514, CHEM 3703/3702L, CHEM 3713/3712L, CHEM 4123, CHEM 4213/4211L, CHEM 4723, and at least one additional advanced lecture course with 3514 as a prerequisite is required. Students who pass the CHEM 1103 Freshman Chemistry Proficiency Exam and enroll in CHEM 1123/1121L and receive a grade of "C" or better in these courses will also receive credit for CHEM 1103/1101L. A minimum of 18 hours of science outside of chemistry and including mathematics through MATH 2574 and physics through PHYS 2074 are required. These mathematics and physics courses are prerequisites for some advanced courses and should be scheduled early in the student's program. Some work in the biological sciences is recommended. This program meets the minimum requirements for certification by the American Chemical Society if CHEM 3813 (or CHEM 5813/5843) is included.

Students in the international option are also required to complete a thesis as part of the transatlantic dual-degree program requirements. This will be fulfilled by successful completion of a minimum of 1 credit hour of

CHEM 498V Senior Thesis. A minor is not required.

**University of Arkansas State Core for International Option students:** All state institutions of higher education in Arkansas have a 35-hour minimum core requirement with specified hours in each of six academic areas. This core includes 6 credit hours of English Composition, 6 credit hours of Fine Arts/Humanities, 9 credit hours of Social Science, 3 credit hours of American History, 8 credit hours of science, and 3 credit hours of mathematics. The specific courses at the University of Arkansas that meet those requirements are listed on page 40. It is expected that students from Dublin City College and the University of Regensburg will most likely meet the UA State Core requirements for math and science from transfer credits. The additional English, fine arts and humanities, U.S. History, and Social Science requirements can be met through successful scores on CLEP examinations (page 47), International Baccalaureate exams (page 48), credit by examination conducted by the UA Department of Foreign Languages (cost is \$25 per exam and a grade of “B” or better on the exam is required for credit), and through Continuing Education Independent Study/Correspondence coursework. (No more than 6 hours of Independent Study/Correspondence coursework may be applied to a University of Arkansas degree in the final 30 hours of degree coursework.) It may be necessary for Dublin/Regensburg students to enroll in coursework at the University of Arkansas, Fayetteville campus during the first and/or second summer terms immediately following the spring participating semester to complete state core requirements.

**Fulbright College Graduation Completion Requirements for International Option students:**

1. A minimum of 124 University of Arkansas degree credit hours are required for a B.S. with a Major in Chemistry, International Option.
2. Residency Requirement – All students in the International Option must complete the minimum residency requirement of at least 30 semester hours in courses offered on the campus in Fayetteville. Fulbright College requires no fewer than 30 hours of credit must be in courses offered by Fulbright College. The College also has a “24 hour rule” that requires a student to complete a minimum of 24 credit hours at the 3000-level or higher, taken from courses in Fulbright College.
3. All other Fulbright College of Arts & Sciences Graduation requirements apply. See pages 122.
4. Fulbright College of Arts & Sciences Bachelor of Science degree requirements. See page 124.

**Requirements for a B.A. degree with a Major in Chemistry:** Pre-medical students, prospective secondary school science teachers, and others who do not intend to pursue professional careers in chemistry may satisfy the requirements by completing CHEM 1213/1211L, CHEM 1223/1221L, (or CHEM 1103/1101L, CHEM 1123/1121L), CHEM 2262, CHEM 2272, and 18 additional semester hours in chemistry to include CHEM 3703/3702L-3713/3712L or CHEM 3603/3601L-3613/3611L, and either CHEM 3453/3451L, or the combination CHEM 3504-3514-3512L and two additional lecture courses numbered above 3000. PHYS 2033/2031L and MATH 2554 or MATH 2043 are prerequisites for CHEM 3453, and PHYS 2074 and MATH 2574 are prerequisites for the alternate physical chemistry course sequence CHEM 3504-3514/3512L. These physics and mathematics prerequisite requirements are substantial, and these courses and their prerequisites should be scheduled early in the student's program. Sample schedules may be obtained from the department of chemistry and biochemistry. Prospective students should consult a departmental adviser.

**Chemistry B.A. Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-4	MATH 1203 (if required) or †MATH 2043 or †MATH 2554 (as advised)*
4	CHEM 1213/1211L CHEM for Majors I or CHEM 1103/1101L University CHEM I
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16-17</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3-4	†MATH 2043 Survey of Calculus or MATH 2554 Calculus I* (as needed) or Elective
3	CHEM 1223/1221L CHEM II Majors or CHEM 1123/1121L University CHEM II
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15-16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
4-5	†‡CHEM 3703/3702L Organic I for Majors or †‡CHEM 3603/3601L Organic I
4	†PHYS 2013/2011L College Physics I
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Elective
<b>17-18</b>	<b>Semester Hours</b>
Spring Semester Year 2	
4-5	†‡CHEM 3713/3712L Organic II for Majors or †‡CHEM 3613/3611L Organic II
4	†PHYS 2023/2021L College Physics II
3	†Core from group g (if needed) or Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Elective
<b>17-18</b>	<b>Semester Hours</b>
Fall Semester Year 3	
2	†CHEM 2262 Analytical Lecture
4	†‡CHEM 3453/3451L Elements of Physical CHEM
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Elective
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	†Core from group g (if needed) or Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
4	Core from Biological Sciences group f
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	†‡CHEM 3813 Introduction to Biochemistry or †‡4813H Biochemistry I
2	†CHEM 2272 Analytical Lab
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	†‡Upper Level Fulbright College Elective
1	Elective
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	†‡CHEM 4853 Biochemical Techniques

3	†‡CHEM 4843H or †‡3113 Intermediate Inorganic Chem or †‡4043 Environmental Chem
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
15	Semester Hours
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.
- \* Depending on placement; MATH 2043 Survey of Calculus is another option for this degree. Student may also choose to take MATH 1285 Precalculus in Fall Semester 1 and MATH 2554 Calculus in Spring Semester 1. Another option is to complete MATH 1203 in Fall Semester 1 and MATH 2043 Survey of Calculus in Spring Semester 1.

**Requirements for a B.A. degree with a Major in Chemistry, Biochemistry Option:** A minimum of 32 semester hours in chemistry including CHEM 1213/1211L, CHEM 1223/1221L, (or CHEM 1103/1101L, CHEM 1123/1121L), CHEM 2262, CHEM 2272, either CHEM 3453/3451L or CHEM 3504-3514-3512L, either CHEM 3603/3601L-3613/3611L or CHEM 3703/3702L-3713/3712L, CHEM 4853 or completion of a senior thesis based on independent research wherein at least 1 credit hour is earned in CHEM 500V (chemistry research) and/or CHEM 498V (senior thesis) during each of 3 different semesters, and either CHEM 5813-5843 or CHEM 3813-4213/4211L or CHEM 3813-4123 or CHEM 3813-4723, MATH 2554 or MATH 2043, PHYS 2013/2011L-2033/2031L or 2054-2074, and 11 hours from the biological sciences, at least 3 hours of which must be upper-level courses. The mathematics and physics courses are prerequisites for some advanced courses and should be scheduled early in the student's program.

### Chemistry B.A. Eight-Semester Degree Program with Biochemistry Option

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-4	†MATH 2554 Calculus I or other mathematics course as advised for major*
4	CHEM 1213/1211L Chem for Majors I or 1103/1101L University Chem I
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16-17</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3-4	†MATH 2564 Calculus II* (or other math as needed) or Core from areas a, b, c, d or e (as needed)
4	CHEM 1223/1221L Chem for Majors II or 1123/1121L University Chem II
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16-17</b>	<b>Semester Hours</b>
Fall Semester Year 2	
4	BIOL 1543/1541L Principles of Biology
4	†PHYS 2054/2050L University Physics I or †PHYS 2013/2011L College Physics I
3	†Core from area g (if needed) or Advanced Elective
3	Core from areas a, b, c, d or e (as needed)

3	Core from areas a, b, c, d or e (as needed)
<b>17</b>	<b>Semester Hours</b>
Spring Semester Year 2	
4	†CHEM 2262/2272 Analytical Chem
4	†PHYS 2074/2070L University Physics II or †PHYS 2033/2031L College Physics II
3	Biology Elective
3	†Core from area g (if needed) or Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>17</b>	<b>Semester Hours</b>
Fall Semester Year 3	
5	†‡CHEM 3703/3702L Organic Chem I for Majors
4	†‡CHEM 3453/3451L Elements of Physical Chem or CHEM 3504 Physical Chem
3	†Core from area g (if needed) or Core from areas a, b, c, d or e (as needed)
4	†‡Upper Level Biology Elective
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 3	
5	†‡CHEM 3713/3712L Organic Chem II for Majors
6	†‡CHEM 3514/3512L Physical Chem II or †‡CHEM Elective 3000-4000 Level and Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>14</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	†‡CHEM 3813 Introduction to Biochemistry or †‡CHEM 4813H
3	†‡CHEM 4123 Advanced Inorganic Chem I
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	†‡CHEM 4853 Biochemical Techniques
3	†‡CHEM 4843H or †‡3113 Intermediate Inorganic Chem or †‡4043 Environmental Chem
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.
- \* Depending on placement; MATH 2043 Survey of Calculus is another option. Student may also choose to take MATH 1285 Precalculus in Fall Semester Year 1 and MATH 2554 Calculus in Spring Semester Year 1. Another option is to complete MATH 1203 in Fall Semester 1 and MATH 2043 Survey of Calculus in Spring Semester Year 1.

**Writing Requirement:** Chemistry majors will satisfy the Fulbright College writing requirement by satisfactory completion of the formal research/analytical reports required in Physical Chemistry Laboratory, CHEM 3451L or CHEM 3512L.

**Requirements for Departmental Honors in Chemistry:** Students with good academic backgrounds and strong interests in research are encouraged to participate in the department of chemistry and biochemistry honors program. Entrance into the program is normally during the sophomore year or the first semester of the junior year, and a minimum cumulative GPA of 3.5 is required. Entrance is initiated by consulting the faculty academic adviser, who will help arrange conferences with potential faculty research project advisers. When there is agreement between the student and the adviser on a research project or area, an Honors Advisory Committee is set up to supervise the honors candidate's program. The heart of the program is the research project, but students are encouraged to broaden their experience beyond required courses within chemistry, the

natural sciences, the social sciences, and the humanities. Participation in Honors Colloquia, honors sections of regular courses, and chemistry departmental and divisional seminars is especially recommended. All honors candidates enroll in the spring semester Honors Seminar (CHEM 4011H), and senior honors students must make at least one seminar presentation. All honors candidates will be required to complete and defend an honors thesis and take 12 hours (which may include 6 hours of thesis) in Honors Studies. The thesis is required in the spring semester of the senior year, followed by an oral presentation. On the basis of these written and oral reports and their evaluation of all aspects of the student's honor program, the candidate's Honors Advisory Committee will recommend whether or not the distinction "Chemistry or Biochemistry Scholar *Cum Laude*" should be awarded. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate's program of honors studies.

**Requirements for a Minor in Chemistry:** 18 hours of courses above the 1000 level including CHEM 2262, CHEM 2272, CHEM 3603/3601L, CHEM 3613/3611L, CHEM 3453, and a 3-hour course at the 3000-4000 level. A student must notify the department of his or her intent to minor.

**Chemistry (B.A. or B.S.) Physical/Earth Science Teacher Licensure Requirements:**

Please refer to the Secondary Education Requirements for Fulbright College Students on page 118.

Students wanting to teach science in middle school should consult with a middle level adviser in the College of Education and Health Professions.

SEE PAGE 326 FOR CHEMISTRY (CHEM) COURSES

**CLASSICAL STUDIES (CLST)**

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- Professors Levine, Spellman, Waligorski
- Associate Professors Coon, Fredrick
- Assistant Professor Pappas

**Requirements for a Major in Classical Studies:** The college offers a major in classical studies leading to the Bachelor of Arts degree. Students should select appropriate courses from the following:

1. 15 hours of Ancient Greek or 15 hours of Latin.
2. 18 hours of additional work in classical languages and/or specific classical studies-related electives, to be selected from the following courses: ARCH 2233, ARHS 4833, ARHS 4843, CLST 1003, CLST 1013, HIST 4003, HIST 4013, HIST 4023, HIST 4043, HIST 4053, PHIL 4003, PHIL 4013, PHIL 4023, PLSC 3953, WLIT 2323.  
 No more than nine hours of electives from the medieval period may be applied to the major requirements.
3. Three hours of a classical studies colloquium (CLST 4003H).

**Classical Studies Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I

3	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
3	GREK or LATN 1003 Elementary Classical Language I
3	Core from areas a, b, d, or e (as needed)
3	Core from areas a, b, d, or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3	†MATH 2043, 2053, 2183 or 2554 or Core from areas a, b, d, or e (as needed)
3	GREK or LATN 1013 Elementary Classical Language II
3	CLST 1013 Introduction to Classical Studies: Rome
3	Core from areas a, b, d, or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	GREK or LATN 2003 Intermediate Classical Language I
3	GREK or LATN 1003 Elementary Classical Language I or General Elective
3	Core from areas a, b, d, or e (as needed)
3	Core from areas a, b, d, or e (as needed)
3	CLST 1003 Introduction to Classical Studies: Greece
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	GREK or LATN 2013 Intermediate Classical Language II
3	GREK or LATN 1013 Elementary Classical Language II or General Elective
3	†Core from area g (if required) †Advanced Level Elective
4	Core from area f (as needed)
3	Core from areas a, b, d, or e (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 3	
3	†‡ GREK or LATN Advanced Language
3	GREK or LATN 2003 Intermediate Classical Language I or General Elective
3	†Core from area g (if required) or †Advanced Level Elective
3	Core from areas a, b, d, or e (as needed)
3	Core from areas a, b, d, or e (as needed)
1	General Elective
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	GREK or LATN 2013 Intermediate Classical Language II or General Elective
3	†‡ Classical Studies Elective
3	†‡ CLST 4003H Honors Classical Studies or †‡ Classical Studies Elective
3	Core from areas a, b, d, or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	†‡ Classical Studies Elective
3	†‡ Classical Studies Elective
3	Core from areas a, b, d, or e (as needed)
3	Core from areas a, b, d, or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	†‡ Classical Studies Elective
3	†‡ Classical Studies Elective
3	†‡CLST 4003H Honors Classical Studies (if needed) or †‡ Classical Studies Elective
3	† Advanced Level Elective
3	†‡ Upper-Level ARSC Elective
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

† Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter  
 ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.



**Requirements for a Minor in Classical Studies:** Students should select appropriate courses from the following areas:

1. 9 hours of Ancient Greek or Latin courses numbered above 2000,
2. 6 hours of additional work in classical languages and/or specific classical studies-related electives, to be selected from the following courses: ARCH 2233, ARHS 4833, ARHS 4843, CLST 1003, CLST 1013, HIST 4003, HIST 4013, HIST 4023, HIST 4043, HIST 4053, PHIL 4003, PHIL 4013, PHIL 4023, PLSC 3953, WLIT 2323,
3. Three hours of a classical studies colloquium (CLST 4003H).

**Requirements for Honors in Classical Studies:** The Honors Program in Classical Studies gives students of high ability the opportunity to strengthen their study of classics by intensifying their experience with ancient languages and cultures.

In addition to the requirements for graduation with a major in classical studies and the general college requirements for a B.A. degree, honors candidates in classical studies must

1. be accepted as honors candidates by the Classical Studies Committee,
2. complete at least three semesters in a second classical language,
3. enroll in at least two 1-hour units of CLST 399VH and pursue independent-study topics under the guidance of classical studies faculty,
4. enroll for two hours of CLST 399VH and write an honors thesis, and
5. defend and discuss their entire honors program in an oral examination.

Successful completion of the requirements will be recognized by the award of the distinction “Classical Studies Scholar *Cum Laude*” at graduation. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate’s program of honors studies.

SEE PAGE 330 FOR CLASSICAL STUDIES (CLST) COURSES

## COMMUNICATION (COMM)

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- Professors Allen, Frenzt, Scheide, Smith (S.), Webb, Wicks
- Professors Emeriti Rea, Rogers
- Associate Professors Amason, Brady, Rosteck, Warren
- Associate Professor Emeritus Bailey
- Assistant Professor Corrigan, Schulte, Walker
- Research Assistant Professor Smith (L.)
- Assistant Professor Emeritus Galloway
- Adjunct Assistant Professor Cowling

As a subject for academic study, communication bridges the humanities and the social sciences. It focuses on relationships – personal, group, and societal – and the factors and processes that affect important relationships. Friendships and families, business relationships and political systems, cultural interaction and technological advances are important areas of study in communication. Communication students may concern themselves with the dynamics of interpersonal persuasion, the effects of media technologies, the nature of gender stereotypes, the function of roles within the family, the structure of organizational authority, the influence of cultural myths, the impact of social movements, and the history of rhetoric. Because the program offers many diverse interests, there is a place for anyone with a genuine curiosity about human communication and its effect upon society.

Communication majors from recent graduating classes now hold responsible positions in government and public affairs, in management, marketing,

and public relations within private business, and in television and mass media organizations. Many others are successfully pursuing further education in graduate and professional schools.

The department of communication offers general studies of the discipline, as well as concentration in three specific emphasis areas:

1. rhetoric and public communication,
2. interpersonal, small group, and organizational communication, and
3. mass communication.

Students may also select a program for acquisition of teaching certification in the field.

**Admission Requirements for a Major in Communication:** For standing as a major, entering freshmen must have ACT composite scores of 20 or higher, and those transferring into the program after the first semester of college study must have a cumulative grade-point average of 2.00 or higher.

**University and College Requirements for a Major in Communication:** 36 semester hours in communication courses, to include COMM 2333, COMM 3343, COMM 3443, COMM 3673, at least 12 additional hours chosen from COMM courses above 3000. A minimum grade of “C” is required in COMM 2333, COMM 3343, COMM 3443, and COMM 3673. Communication courses used to satisfy the college or University Core requirements will not count toward the major. To graduate, students must have a cumulative grade-point average of 2.00 or above within the major.

**Writing Requirement:** The college writing requirement may be satisfied by a research paper achieving a grade of “C” or better submitted for an upper-division communication class and approved by the chair of the department.

**Requirements for Departmental Honors in Communication:** The Honors Program in communication gives an opportunity for a student to achieve an additional level of intellectual growth and a satisfaction of accomplishment. A student engages in independent research and writing, under the supervision of a member of the communication faculty, and participates in special honors classes, seminars, and colloquia.

Faculty recognize outstanding achievement by a student by recommending that the bachelor’s degree in communication be awarded with the distinction “Communication Scholar *Cum Laude*.” Higher distinctions may be awarded to truly outstanding students based upon the whole of their academic program and quality of honors research.

To enter the Honors Program, a student must possess a 3.5 minimum grade-point average on all academic work and receive the recommendation of a faculty member in communication to the Honors Council of Fulbright College. A student may pursue an independent research program of a historical, critical, descriptive, or experimental nature, within any of the areas of rhetorical or communication theory, history of public address, interpersonal, small-group, or organizational communication, persuasion, argumentation, political communication, freedom of speech, communication education, or in any closely related areas of inquiry. A student interested in mass communications, broadcasting, or film may choose to pursue either a research project or a creative study. In addition to satisfying the general college and departmental requirements for a bachelor’s degree, a student must satisfy departmental honors requirements, which include the following:

1. become an honors candidate no later than the first semester of the junior year of study,
2. enroll in COMM 399VH, Honors Course, a minimum of one hour of credit each semester during the junior-senior years,
3. achieve a 3.5 minimum grade-point average in communication,
4. take 12 hours, which may include 6 hours of thesis in Honors Studies, and
5. write and defend before a faculty examining committee a thesis based on the investigative or creative project undertaken in COMM 399VH.

For a full description of the Honors Program and its requirements, consult with an adviser in the department of communication.

**Communication Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
3	COMM 1313 Fundamentals of Communication
3	Core from areas b, c, d or e (as needed)
3	Core from areas b, c d or e (as needed)
15	Semester Hours
Spring Semester Year 1	
3	ENGL 1023 Composition II
3-4	†MATH 2033, 2043, 2053, 2183 or 2554 or Core from areas b, c, d or e (as needed)
3	Core from areas b, c, d or e (as needed)
4	Core from area f (as needed)
3	Core from areas b, c, d or e (as needed)
16-17	Semester Hours
Fall Semester Year 2	
3	COMM 2333 Comm Research or any 2000 level COMM class
4	Core from area f (as needed)
3	Core from areas b, c, d or e (as needed)
3	Core from areas b, c, d or e (as needed)
3	Core from areas b, c, d or e (as needed)
16	Semester Hours
Spring Semester Year 2	
3	†Core from area g (if required) or †Advanced Level Elective
3	COMM 2333 Comm Research or any 2000, †‡3000 or †‡4000 level class
3	Core from areas b, c, d or e (as needed)
4	Core from area f (as needed)
3	Core from areas b, c, d or e (as needed)
16	Semester Hours
Fall Semester Year 3	
3	†‡ COMM Group A (below) or any †‡3000 or †‡4000 level class
3	†‡ COMM Group A (below) or any †‡3000 or †‡4000 level class
3	†Core from area g (if required) or †Advanced Level Elective
3	Core from areas b, c, d or e (as needed)
3	Core from areas b, c, d or e (as needed)
15	Semester Hours
Spring Semester Year 3	
3	†‡COMM Group A (below, as needed) or any †‡3000 or †‡4000 level class
3	†‡COMM Group A (below, as needed) or any †‡3000 or †‡4000 level class
3	Core from areas b, c, d or e (as needed)
3	Core from areas b, c, d or e (as needed)
3	General Elective
15	Semester Hours
Fall Semester Year 4	
3	†‡ COMM Group A (below, as needed) or any †‡3000 or †‡4000 level class
3	†‡ COMM Group A (below, as needed) or any †‡3000 or †‡4000 level class
3	†‡COMM 3000 or 4000 level class
3	Core from areas b, c, d or e (as needed)
4	General Electives
16	Semester Hours
Spring Semester Year 4	
3	†‡COMM 3000 or 4000 level class
3	†‡COMM 3000 or 4000 level class

3	†‡COMM 3000 or 4000 level class
3	†Advanced Level Elective
3	General Elective
15	Semester Hours
124	Total Hours

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Communication Group A**

- COMM 3343 Contemporary Communication Theory
- COMM 3443 Introduction to Rhetorical Theory
- COMM 3673 Mediated Communication

**Requirements for a Minor in Communication:** 18 hours including COMM 2303 and COMM 2323. At least 9 hours must be numbered 3000 or above. A student should consult with an adviser in the department of communication for the selection of appropriate courses. A student must notify the department of his or her intent to minor.

**Communication (B.A.) Drama/Speech Teacher Licensure Requirements:**

Please refer to the Secondary Education Requirements for Fulbright College Students on page 118.

SEE PAGE 331 FOR COMMUNICATION (COMM) COURSES

**COMPUTER SCIENCE AND COMPUTER ENGINEERING**

Susan Gauch  
 Head of the Department  
 504 JB Hunt Center for Academic Excellence  
 479-575-6197

- Professors Apon, Crisp, Deaton, Gauch (J.), Gauch (S.), Li, Panda, Skeith, Thompson (C.)
- Associate Professors Beavers, Parkerson, Thompson (D.)
- Assistant Professors Di, Shen

The department offers the Bachelor of Science in Computer Engineering, Bachelor of Science in Computer Science, Bachelor of Arts in Computer Science, and graduate degrees in computer science and computer engineering. The Bachelor of Science degrees for this department are listed in the College of Engineering section of this catalog. The graduate degrees are described in the *Graduate School Catalog*.

The educational objectives of the department are to produce graduates who are recruited in a competitive market and make valuable contributions to a wide variety of industries, particularly in computer and information technology, who succeed in graduate or professional studies, who pursue life-long learning and continued professional development, and who undertake leadership roles in their profession, in their communities, and in the global society.

**Requirements for a B.A. degree with a Major in Computer Science:** At least 30 hours in computer science including CSCE 2003/2001L, CSCE 2013/2011L, CSCE 3143, CSCE 3313, and CSCE 4313 plus 13 hours of electives to be selected from a list of CSCE courses numbered 3000 or higher offered by the department.

The mathematics requirements of the degree are MATH 2554, MATH 2103, MATH 3103.

A 2.0 cumulative GPA on all work completed in the Department of Computer Science is required.

**Computer Science B.A. Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
4	†MATH 2554
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3	Core from areas a, b, c, d or e (as needed)
4	CSCE 2003/2001L Programming Foundations I and Lab
4	Core from area f (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>17</b>	<b>Semester Hours</b>
Fall Semester Year 2	
4	CSCE 2013/2011L Programming Foundations II and Lab
3	†MATH 2103 Discrete Mathematics
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	†Core from area g (if needed) or †Advanced Level Elective
3	†CSCE 3143 Data Structures
3	†‡MATH 3103 Combinatorial and Discrete Mathematics
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 3	
3	†‡CSCE 3313 Algorithms
3	†‡CSCE 3000-4000 Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	†‡CSCE 3000-4000 Level Elective
3	†‡CSCE 3000-4000 Level Elective
3	†Core from area g (if still needed) or †Advanced Level Elective
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	†‡CSCE 4313 Programming Languages
3	†‡CSCE 3000-4000 Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	†Advanced Level Elective
1	General Elective
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	†‡CSCE 3000-4000 Level Elective
3	†Advanced Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	General Elective

3	General Elective
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Requirements for a Minor in Computer Science:** CSCE 2003/2001L, CSCE 2013/2011L, CSCE 3143, CSCE 3313, and either CSCE 2213 or CSCE 4313.

**DRAMA (DRAM)**

- D. Andrew Gibbs  
 Chair of the Department  
 619 Kimpel Hall  
 479-575-2953  
<http://www.uark.edu/depts/drama/>  
[drama@cavern.uark.edu](mailto:drama@cavern.uark.edu)
- Professors Brusstar, Gibbs, Gross, Herzberg, Martin, Riha
  - Associate Professor Dwyer
  - Assistant Professors Landman, Stone
  - Instructor Leftwich

The Department of Drama offers the Bachelor of Arts (B.A.) degree in Drama, a broad spectrum program in the context of a liberal arts education, and the Master of Fine Arts (M.F.A.) degree in six concentrations: Acting, Directing, Playwriting, Costume Design, Scene Design and Lighting Design. (Please see the Graduate Catalog for information regarding the MFA degree.) Classes at both undergraduate and graduate levels are focused on providing a strong, professional orientation to theatre performance and technology in conjunction with appropriate research-based course work to address the required foundations in theatre history, dramatic literature and dramatic criticism.

The educational objectives of the Department of Drama are centered on producing graduates prepared to enter the competitive world of professional play production as well as a variety of teaching and research fields. In addition a background in Drama has proven to be a valuable asset to those wishing to pursue a wide range of corporate and industrial occupations.

The play production program is the “laboratory” for study in Drama. To that end the Department produces an average of 10 plays each year involving students in virtually all aspects of production. Auditions are open to all students on campus.

The Department of Drama also supports course work in Dance, offering a variety of basic and advanced studio courses.

**Requirements for a Major in Drama:** A minimum of 40 semester hours to include 18 semester hours in courses numbered 3000 and above or the prescribed program for teacher licensure in speech education.

**All drama majors must enroll in the following 23 hours:**

- DRAM 1223 Intro. to Dramatic Art
- DRAM 1313/1311L Stage Technology I and Lab: Costumes and Makeup
- DRAM 1323/1321L Stage Technology II and Lab: Scenery and Lighting
- DRAM 1683 Acting I
- DRAM 2313 Introduction to Theatrical Design (DRAM 1323)
- DRAM 4233 History of the Theatre I (*DRAM 1223*) *Fulfills Fulbright College writing requirement*

DRAM 4333 History of the Theatre II (DRAM 1223) *Fulfills Fulbright College writing requirement*

**Group A:** 3 hours to be chosen from:

DRAM 3653 Directing I (Pre-req: DRAM 1223, 1683, 1313/1311 and 1323/1321 and DRAM 2683)

DRAM 3683 Stage Management (Pre-req: DRAM 1223, 1683, 1313/1311 and 1323/1321)

**Group B:** 3 hours to be chosen from:

DRAM 3213 Costume Design I (DRAM 1313/1311)

DRAM 3733 Stage Lighting I (DRAM 1323/1321)

DRAM 3903 Theatrical Makeup (DRAM 1313/1311)

DRAM 4653 Scene Design I (1323/1321)

**Group C:** 3 hours to be chosen from:

DRAM 3803 Development of the Drama (DRAM 1223)

DRAM 4733 Dramatic Criticism (DRAM 3803) *Fulfills Fulbright*

*College writing requirement*

DRAM 4463 African American Theatre History

DRAM 491 Special Topics In Script Analysis/Synthesis

DRAM 4953 Theatre Study In Britain or a dramatic literature, dramatic criticism or theatre history seminar as approved by the Drama adviser.

**Group D:** 6 hours of electives to be chosen from the following: DRAM 2683, any DRAM course 3000 or above with the exception of DRAM 3001 and 3011.

In addition, all drama majors are required to take an additional 2 credit hours of DRAM 3001 Theatre Practicum, one hour to be taken each academic year. Consult Drama Adviser for more information on these credits.

Note: No drama major may present DRAM 1003 to satisfy the college fine arts requirement.

**Writing Requirement:** The Fulbright College research/analytical paper requirement for drama majors will be fulfilled in DRAM 4233, DRAM 4333, DRAM 4453, or DRAM 4733. Satisfactory completion of an honors project or senior thesis may fulfill the requirement.

**Senior Progress Review:** All drama majors are required, in the semester before graduation, to successfully complete the Senior Progress Review, a faculty assessment of each student's accomplishments in performance and production.

**Requirements for Departmental Honors in Drama:** The Departmental Honors Program in Drama provides upper-division undergraduate students with an opportunity to formally participate in creative and scholarly activities in theatre. Honors candidates engage in independent study and research under the guidance of the drama faculty and participate in special honors seminars and colloquia. Outstanding student achievement will be recognized by awarding the distinction "Drama Scholar *Cum Laude*" at graduation. In addition to satisfying the general college requirements for the bachelor's degree with Honors, honors candidates in drama must:

1. become a candidate no later than the second semester of their junior year,
2. enroll in honors colloquia when available,
3. enroll in six hours of honors research DRAM 399VH,
4. complete and defend in oral examination an honors thesis based upon the project carried out in DRAM 399VH, and
5. achieve a cumulative grade-point average of 3.5. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the candidate's entire academic program. Usually these are awarded only to students with a cumulative grade-point average of 3.50 or above, whose project demonstrates a high degree of creativity and scholarship.

**Drama Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

All drama majors are required to take an additional two hours of DRAM 3001 Theatre Practicum, one hour to be taken each academic year. Consult Drama Adviser for more information on these credits.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	DRAM 1223 Introduction to Dramatic Art
3-4	DRAM 1313/1311L Stage Tech I: Costumes and Makeup/Lab or DRAM 1683 Acting I
3	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or †2554
3	Core from areas a, b, c, d or e (as needed)
<b>15-16</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3-4	DRAM 1323/1321L Stage Tech II: Scenery & Lighting/Lab or DRAM 1683 Acting I (as needed)
3	†MATH 2043, 2053, 2183 or 2554 or Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15-16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3-4	DRAM 1313/1311L Stage Tech I/Lab (if needed) or DRAM 2313 Intro. to Theatrical Design (pre-requisite is DRAM 1323/1321L)
4	Core from group f (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16-17</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3-4	DRAM 1323/1321L Stage Tech II: Scenery & Lighting/Lab or DRAM 1683 Acting I (as needed)
3	†‡DRAM group A, B, C or D (as needed)
3	†Core from area g (if still needed) or †Advanced Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	General Elective (or DRAM 2683 Acting II if planning to take DRAM 3653 Directing I)
<b>15-16</b>	<b>Semester Hours</b>
Fall Semester Year 3	
3	†DRAM 2313 Intro. to Theatrical Design (if needed) or †‡DRAM 4233 History of the Theatre or †Advanced Level Elective
3	†‡DRAM group A, B, C or D (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
4	Core from group f (as needed)
1	†‡DRAM 3001 Theatre Practicum (as needed)*
<b>16-17</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	†‡DRAM 4333 History of the Theatre or †Advanced Level Elective
3	†‡DRAM group A, B, C or D (as needed)
3	†Core from area g (if still needed) or †Advanced Level Elective
3	Core from areas a, b, c, d or e (as needed)
4	Core from group f (as needed)
1	†‡DRAM 3001 Theatre Practicum (as needed)*
<b>16-17</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	†‡DRAM 4233 History of the Theatre (if needed) or †‡DRAM group A, B, C or D (as needed)

3	†‡DRAM group A, B, C or D (if needed) or General Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
1	†‡DRAM 3001 Theatre Practicum (as needed)*
<b>15-16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3	†‡DRAM 4333 History of the Theatre (if needed) or †‡DRAM group A, B, C or D (as needed)
3	†‡DRAM group A, B, C or D (if needed) or General Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	†Advanced Level Elective
1	†‡DRAM 3001 Theatre Practicum (as needed)*
<b>15-16</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Requirements for a Minor in Drama:** A minimum of 18 semester hours in drama, including DRAM 1223. One of the following courses or course/lab combinations is also required: DRAM 1313 and 1311L, or DRAM 1323 and 1321L, or DRAM 1683. The remaining hours must be selected from courses at the 3000- or 4000-level, the specific courses to be determined by the student in consultation with a drama department faculty adviser. The student must notify the department of his or her intent to minor.

**Drama (B.A.) Drama/Speech Teacher Licensure Requirements:**

Please refer to the Secondary Education Requirements for Fulbright College Students on page 118.

For requirements for the M.A. and M.F.A. degrees in drama, see the *Graduate School Catalog*.

SEE PAGE 337 FOR DRAMA (DRAM) COURSES SEE PAGE 337 FOR DANCE (DANC) COURSES

**ECONOMICS (ECON)**

- Gary D. Ferrier  
 Chair of the Department  
 402 Business Building  
 479-575-ECON (3266)  
<http://waltoncollege.uark.edu/ECON/default.asp>
- Margaret Gerig and R.S. Martin Jr. Chair in Business Professor Farmer
  - Lewis E. Epley Jr. Professor in Economics Ferrier
  - University Professors Britton, Gay
  - Professors Curington, Dixon, Horowitz, Ziegler
  - Associate Professors Deck, Kali, Mendez, Reyes
  - Assistant Professor Gu
  - Clinical Associate Professor Stapp
  - Instructor Johnson

**Requirements for a Major in Economics:** 30 semester hours, including ECON 2143 or ECON 2013 and ECON 2023, ECON 3033, ECON 3133, ECON 4743, and ECON 4033.

NOTE: It is strongly recommended that economics majors who plan to continue their studies at the graduate level take two semesters of calculus (MATH 2554 and MATH 2564) and linear algebra (MATH 3083).

**Economics Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

<b>Fall Semester Year 1</b>	
3	ENGL 1013 Composition I
3-4	MATH 2053 Finite Math or MATH 2554 Calculus I
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15-16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 1</b>	
3	ENGL 1023 Composition II
3-4	†MATH 2043 Survey of Calculus or MATH 2564 Calculus II or Core from areas a, b, c, d or e (as needed)
3	†ECON 2013 Prin. of Macroeconomics or ECON 2023 Prin. of Microeconomics
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16-17</b>	<b>Semester Hours</b>
<b>Fall Semester Year 2</b>	
3	†ECON 2023 Prin. of Microeconomics or †ECON 2013 Prin. of Macroeconomics (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	WCOB 1033 Data Analysis or STAT 2303 Principles of Statistics
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 2</b>	
3	†Core from area g (if still needed) or †Advanced Level Elective
3	††ECON 3033 Microeconomic Theory or ECON 3133 Macroeconomics Theory
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Total Hours</b>
<b>Fall Semester Year 3</b>	
3	††ECON 3133 Macroeconomics Theory or ††ECON 3033 Microeconomic Theory
3	††ECON 3000-4000 level
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
3	General Elective
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
3	††ECON 4033 History of Economics Thought or ††ECON 4743 Introduction to Econometrics
3	††ECON 3000-4000 level
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	†Core from area g (if still needed) or †Advanced Level Elective
<b>15</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	††ECON 3000-4000 level
3	††ECON 3000-4000 level
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)

4	General Electives
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3	†‡ECON 4033 History of Economic Thought or †‡ECON 4743 Introduction to Econometrics (as needed)
3	†Advanced Level Elective
3	†Advanced Level Elective
3	General Elective
3	General Elective
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Requirements for a Major in Economics with Emphasis in International Economics and Business:**

1. 30 semester hours of courses, including ECON 2013, ECON 2023, ECON 3033, ECON 3133, ECON 4633, ECON 4643, and 12 hours of international economics and business electives that may be selected from ECON 3843, ECON 3853, ECON 410V, ECON 4653, ECON 468V, MGMT 4583, or other courses approved by the departmental adviser. Course pre-requisites for non-economics international business courses will count toward this 12-hour requirement. Thus, if a student wants to take MKTG 4833 International Marketing as an international economics and business elective, he/she also must take the prerequisite MKTG 3433 Introduction to Marketing Strategy. These two courses will satisfy 6 hours of the elective requirement,
2. 9 hours of upper-division course work in Fulbright College that focuses on a country or region of the world related to the foreign language, which might include upper-division courses in the same language, which should emphasize literature or cultural topics. Courses must be approved by the departmental adviser. Students who meet the requirements of the Fulbright College area studies programs in Asian Studies, Middle Eastern and Islamic Studies, Latin American Studies, or European Studies will be considered to have fulfilled this requirement,
3. MATH 2043 and MATH 2053 or MATH 2554 and MATH 2564 ñ these courses fulfill the Fulbright College mathematics requirement.
4. 9 hours of business/stat courses to include WCOB 1033 or STAT 2303, WCOB 1023 and 3 hours of WCOB 2013, WCOB 2023, WCOB 2033 or WCOB 2043 (students must also complete WCOB 1120 or equivalent and WCOB 1012 as a prerequisite to any of the 2000-level WCOB courses).
5. 6 hours of a foreign language at the intermediate level, or above, and
6. 3 hours of upper-division foreign language in the same language covering business communications, or equivalent. Any student whose minimum 6-hour requirement under (#5) above includes an upper-division course may choose to include business communications among the 6 hours of required university course work in the foreign language.

NOTE: It is strongly recommended that economics majors who plan to continue their studies at the graduate level take two semesters of calculus (MATH 2554 and MATH 2564) and linear algebra (MATH 3083).

**Economics Eight-Semester Degree Program with Emphasis in International Economics and Business**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the

program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

<b>Fall Semester Year 1</b>	
3	ENGL 1013 Composition I
3-4	MATH 2053 Finite Math or 2554 Calculus I
3	Foreign language course numbered 1003 or 1013
2	WCOB 1012 Legal Environment of Business
0	WCOB 1120 Computer Competency Requirement
3	COMM 1313 Fundamentals of Communication
<b>14-15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 1</b>	
3	ENGL 1023 Composition II
3	†ECON 2023 Principles of Microeconomics
3	Foreign language course numbered 1013 or 2003
3	WCOB 1023 Business Foundations
3	WCOB 1033 Business Statistics or STAT 2303 Principles of Statistics
<b>15</b>	<b>Semester Hours</b>
<b>Fall Semester Year 2</b>	
3	Foreign language course numbered 2003 or 2013
3	†ECON 2013 Principles of Microeconomics
3-4	†MATH 2043 Survey of Calculus or MATH 2554 Calculus I
3	WCOB 2013, 2023, 2033, or 2043
3	Core from group f (as needed)
<b>15-16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 2</b>	
3	†Core from group g (if required) or †Advanced Level Elective
3	†‡ ECON 3033 Microeconomic Theory
3	Foreign language course numbered 2013 or †‡ Upper Division Foreign Language
3	Core from areas a, b, d or e (as needed)
3	Core from areas a, b, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
<b>Fall Semester Year 3</b>	
3	†‡ ECON 3133 Macroeconomic Theory
3	†‡ Upper Division Foreign Language
3	Core from areas a, b, d or e (as needed)
3	Core from areas a, b, d or e (as needed)
4	Core from group f (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
3	†‡ ECON 4633 International Trade
3	† International Economics and Business Elective
3	†‡ Upper Division Foreign Language or Core from areas a, b, d or e
3	†‡ Upper Level Area Studies from ARSC
4	Core from group f (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	†‡ ECON 4643 International Monetary Policy
3	†International Economics and Business Elective
3	†International Economics and Business Elective
3	†‡ Upper Level Area Studies from ARSC
3	Core from areas a, b, d or e (as needed)
1	General Elective
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3	† International Economics and Business Elective
3	†‡ Upper Level Area Studies from ARSC
3	Core from areas a, b, d or e (as needed)
3	Core from areas a, b, d or e (as needed)
<b>12</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Writing Requirement:** The Fulbright College writing requirement for economics majors will be fulfilled by the research/analytical paper required in ECON 4033. For economics majors who elect to emphasize international economics and business, the writing requirement will be fulfilled by the research/analytical paper required in ECON 4633 or 4643.

**Requirements for Departmental Honors in Economics:** The Departmental Honors program provides upper-division students the opportunity to engage in independent study or research under the guidance of an individual member of the faculty. In addition to satisfying the general college requirements for the bachelor's degree with honors, honors candidates in economics are required to complete and orally defend an honors thesis based upon independent study under ECON 399VH (for 3 to 6 hours) and to have a minimum grade-point average of 3.5. Outstanding student achievement will be recognized by awarding the bachelor's degree with the distinction "Economics Scholar *Cum Laude*." Higher distinctions may be awarded to truly outstanding students based upon the whole of their academic program and quality of honors research.

The following courses, among others in business administration, are given credit toward an economics major for the B.A. degree. For description of these courses, see College of Business Administration section of this catalog.

- FINN 3133 Commercial Banking
- FINN 3043 Principles of Finance
- WCOB 1033 Data Analysis and Interpretation

For the combined major in economics and African-American studies, see page 129.

**Requirements for a Minor in Economics:** 18 hours in economics. Required courses are ECON 3033 Microeconomic Theory, and ECON 3133 Macroeconomic Theory, plus 12 additional hours in economics, six of which must be in courses numbered 3000 or above.

NOTE: ECON 2013 and ECON 2023, or ECON 2143, are prerequisites to all economics courses numbered above 3000.

**Economics (B.A.) Social Studies Teacher Licensure Requirements:**

Please refer to the Secondary Education Requirements for Fulbright College Students on page 118. Students wanting to teach social studies in middle school should consult with a middle level adviser in the College of Education and Health Professions.

SEE PAGE 328 FOR ECONOMICS (ECON) COURSES

**ENGLISH (ENGL)**

Joseph D. Candido  
 Chair of the Department  
 338 Kimpel Hall  
 479-575-4301  
<http://www.uark.edu/depts/english/>  
[English@cavern.uark.edu](mailto:English@cavern.uark.edu)

- Distinguished Professor Emeritus Guilds
- University Professors Emeriti Harrison, Williams
- Professors Adams, Booker, Burris, Candido, Cochran, DuVal, Giles, Hays, Heffernan, Jolliffe, Montgomery, Quinn, Stephens, Talburt
- Professors Emeriti Bennett, Bolsterli, Hart, Rudolph
- Associate Professors Brock, Gilchrist, Kahf, Marren, McCombs, Slattery

- Associate Professors Emeriti MacRae, Park
- Assistant Professors Bernhard Jackson, Hinrichsen, Tucker
- Adjunct Assistant Professor Gertz
- Instructors Gamble, Gray, Madison, Pappas, Smith

The Department of English offers a major in English, a minor in English, and a combined major in English and journalism.

The major in English is suitable for many purposes, both professional and cultural. By properly selecting courses, the student may prepare for postgraduate work in literature and language; meet the English requirements for secondary teaching licensure; develop writing skills, both in creative and in expository writing; obtain appropriate pre-professional training for areas such as law; or study broadly in the literary culture of English-speaking peoples. A rich variety of courses is offered, and there is opportunity within the major for any student to explore areas of special interest: for example, American literature, the Renaissance, drama, the English language, and modern and contemporary literature.

**Requirements for a Major in English:** 36 semester hours (not counting ENGL 0003, ENGL 1013, ENGL 1023, and ENGL 2003). These hours must include 12 hours of survey courses, including ENGL 2303; either ENGL 2313 or ENGL 2323; either ENGL 2343 or ENGL 2353; and one additional survey course chosen from ENGL 2313, ENGL 2323, ENGL 2343, and ENGL 2353. Majors must take an additional 12 hours that include ENGL 4303; one of ENGL 3713, ENGL 3723, and ENGL 3733; either ENGL 3743 or ENGL 3753; and one of ENGL 3833, ENGL 3843, ENGL 3853, and ENGL 3863. The remaining twelve hours can be taken in any English course numbered above 3000, with the stipulation that at least six of these hours must be numbered above 4000.

**English Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-4	MATH 1203 (If required) or †MATH 2043, 2053, 2183, or 2554
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
<b>15-16</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3-4	†MATH 2043, 2053, 2183 or 2554 or Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
4	Core from area f (as needed)
<b>16-17</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	†ENGL from Group A
3	†ENGL from Group A or Core from areas a, b, c, d, or e (as needed)
3	†Core from area g (if needed) or †Advanced Level Elective
3	Core from areas a, b, c, d, or e (as needed)

3	Core from areas a, b, c, d, or e (as needed)
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 2</b>	
3	†ENGL from Group A or Core from areas a, b, c, d, or e (as needed)
3	†Core from area g (if needed) or †Advanced Level Elective
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
<b>15</b>	<b>Semester Hours</b>
<b>Fall Semester Year 3</b>	
3	†ENGL from Group A or Core from areas a, b, c, d, or e (as needed)
3	‡ENGL from group B or C
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
3	†ENGL from Group A or Core from areas a, b, c, d, or e (as needed)
3	‡ENGL from Group B or C
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	‡ENGL from Group B or C
3	‡ENGL from Group B or C
3	‡ENGL from Group B or C
3	Core from areas a, b, c, d, or e (as needed)
4	General Electives
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3	‡ENGL from Group B or C
3	‡ENGL from Group B or C
3	‡ENGL from Group B or C
6	General Electives
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Group A:** Twelve hours chosen from the following:  
 ENGL 2303 Survey of English Literature from Beginning through 17th Century (required)  
 3 hours from either  
 ENGL 2313 Survey of English Literature from 1700 to 1900 or  
 ENGL 2323 Survey of Modern British, Irish, and Postcolonial Literature  
 3 hours from either  
 ENGL 2343 Survey of American Literature from the Colonial Period through Naturalism or  
 ENGL 2353 Survey of Modern American Literature  
 3 hours from one of remaining ENGL 2313, ENGL 2323, ENGL 2343, or ENGL 2353

**Group B:** Twelve hours chosen from the following:  
 3 hours from either  
 ENGL 3713 Topics in Medieval Literature and Culture,  
 ENGL 3723 Topics in Renaissance Literature and Culture, or  
 ENGL 3733 Topics in English Restoration and 18th Century Literature  
 3 hours from either

ENGL 3743 Topics in 19th Century British Literature and Culture or ENGL 3753 Topics in Modern British Literature  
 3 hours from either  
 ENGL 3833 Topics in American Literature and Culture to 1900,  
 ENGL 3843 Topics in Modern American Literature and Culture,  
 ENGL 3653 Topics in African-American Literature and Culture, or  
 ENGL 3863 Topics in Literature and Culture of the American South  
 3 hours of ENGL 4303 Introduction to Shakespeare (required)

**Group C:** Twelve additional hours in English courses numbered above 3000, at least six of which must be numbered above 4000.

**Writing Requirement:** All upper-division English courses require a research or an analytical paper except ENGL 4003 and the courses in creative writing (ENGL 3013, ENGL 4013, ENGL 4023, ENGL 4073). For this reason all students who fulfill the requirements for a major in English thereby fulfill the Fulbright College writing requirement.

**Requirements for a Major with a Concentration in Creative Writing:** 36 semester hours (not counting ENGL 0003, ENGL 1013, ENGL 1023, and ENGL 2003) to include three hours of ENGL 3203 Poetry; three hours of ENGL 3213 Fiction; three hours of ENGL 2023 Creative Writing I; three hours of ENGL 3013 Creative Writing II; three hours of ENGL 4013 Poetry Workshop or ENGL 4023 Fiction Workshop; twelve hours of survey courses (taken from ENGL 2303, ENGL 2313, ENGL 2323, ENGL 2343, and ENGL 2353); three hours of ENGL 4303 Introduction to Shakespeare; and six additional hours chosen from ENGL courses numbered above 3000 and WLIT courses numbered above 2333.

**English Eight-Semester Degree Program with a Concentration in Creative Writing**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

<b>Fall Semester Year 1</b>	
3	ENGL 1013 Composition I
3-4	MATH 1203 (If required) or †MATH 2043, 2053, 2183, or 2554
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
<b>15-16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 1</b>	
3	ENGL 1023 Composition II
3-4	†MATH 2043, 2053, 2183 or 2554 or Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 2</b>	
3	†ENGL from Group A below
3	†ENGL from Group A or Core from areas a, b, c, d, or e (as needed)
3	†Core from area g (if needed) or †Advanced Level Elective
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
<b>15</b>	<b>Semester Hours</b>



Spring Semester Year 2	
3	†ENGL from Group A or Core from areas a, b, c, d, or e (as needed)
3	†Core from area g (if needed) or †Advanced Level Elective
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
3	General Elective
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 3	
3	†ENGL from Group A or Core from areas a, b, c, d, or e (as needed)
3	†ENGL 2023 Creative Writing I
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	†ENGL from Group A or Core from areas a, b, c, d, or e (as needed)
3	‡†ENGL from Group B or C
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	‡†ENGL 3013 Creative Writing II
3	‡†ENGL from Group B or C
3	‡†ENGL from Group B or C
3	Core from areas a, b, c, d, or e (as needed)
4	General Electives
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	‡†ENGL 4013 Poetry Workshop or ‡†4023 Fiction Workshop
3	‡†ENGL from Group B or C
3	‡†ENGL from Group B or C
3	‡†Upper Level ARSC Course
3	General Elective
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

† Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter

‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Group A:** Twelve hours chosen from the following:

- 3 hours of ENGL 2303 Survey of English Literature from Beginning through 17th Century (required)
- 3 hours from either  
ENGL 2313 Survey of English Literature from 1700 to 1900 or  
ENGL 2323 Survey of Modern British, Irish, and Postcolonial Literature
- 3 hours from either  
ENGL 2343 Survey of American Literature from the Colonial Period through Naturalism or  
ENGL 2353 Survey of Modern American Literature
- 3 hours from one of remaining ENGL 2313 or ENGL 2323 or  
ENGL 2343 or ENGL 2353

**Group B:** Nine hours of the following:

- 3 hours ENGL 3203 Poetry
- 3 hours ENGL 3213 Fiction
- 3 hours ENGL 4303 Introduction to Shakespeare

**Group C:** Six additional hours chosen from English or World Literature courses numbered above 3000

**Requirements for Departmental Honors in English:** The Departmental Honors Program in English allows upper-division undergraduates to strengthen their study of English and adapt it to their interests. Honors candidates enroll in special courses and do directed independent study and

research. In addition to the college and departmental requirements for the major in English and the general college requirements for the B.A. degree, each honors candidate in English must

1. be accepted as an honors candidate by the department,
2. complete at least nine hours of honors course work, at least three hours of which must be in English,
3. enroll in at least three hours of Senior Thesis ENGL 498V and write an honors thesis, either a critical study or a creative writing project, and
4. defend the candidate's entire honors program in an oral examination.

Candidates may petition to enroll in a departmental graduate seminar. Candidates who complete the honors program with merit will graduate with the distinction "English Scholar *Cum Laude*." The distinctions of *Magna Cum Laude* and *Summa Cum Laude* will be awarded only for exceptional work and will be based on the candidate's entire honors program.

**Requirements for a Minor in English:** 18 hours of English (not counting ENGL 0003, ENGL 1013, ENGL 1023, and ENGL 2003) to include any nine hours of survey courses (chosen from ENGL 2303, ENGL 2313, ENGL 2323, ENGL 2343, and ENGL 2353) and nine additional hours chosen from English courses numbered above 3000 and WLIT courses above 2333.

**Requirements for a Combined Major in English and Journalism:** The English requirements for this combined major are as follows: 24 hours of English courses (not counting ENGL 0003, ENGL 1013, ENGL 1023, and ENGL 2003) to include any nine hours of survey courses (chosen from ENGL 2303, ENGL 2313, ENGL 2323, ENGL 2343, and ENGL 2353), and 15 additional hours chosen from English courses numbered above 3000 and WLIT courses above 2333.

The Journalism requirement for the combined major is 24 semester hours including JOUR 1023, JOUR 1033, and JOUR 3633. The remaining 15 hours are filled from one of the two following options:

**Print:** JOUR 2013, JOUR 3013, JOUR 3023, 3123, and one additional journalism course

**Broadcast:** JOUR 2023/2031L, 3072/3071L, JOUR 4863, 4873, and one additional journalism course

**Combined Major in English and Journalism  
Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional BA Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-4	MATH 1203 (If required) or †MATH 2043, 2053, 2183, or 2554
3	JOUR 1023 Media and Society or JOUR 1033 Fundamentals of Journalism
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
<b>15-16</b>	<b>Total Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3	†MATH 2043, 2053, 2183, or 2554 or Core from areas a, b, c, d, or e
3	JOUR 1023 Media and Society or JOUR 1033 Fundamentals of Journalism (as needed)
4	Core from area f (as needed)

3	Core from areas a, b, c, d, or e (as needed)
<b>16</b>	<b>Total Hours</b>
<b>Fall Semester Year 2</b>	
3	†ENGL from survey group (above)
3	†JOUR 2013 News Reporting 1
3	†Core from area g (if needed) or †Advanced Level Elective
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
<b>15</b>	<b>Total Hours</b>
<b>Spring Semester Year 2</b>	
3	†ENGL from survey group (above)
3	‡JOUR 3013 Editing or JOUR 3023 News Reporting 2
3	†Core from area g (if needed) or †Advanced Level Elective
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
<b>15</b>	<b>Total Hours</b>
<b>Fall Semester Year 3</b>	
3	‡JOUR 3023 News Reporting 2 or ‡JOUR 3013 Editing
3	†ENGL from survey group (above)
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Total Hours</b>
<b>Spring Semester Year 3</b>	
3	‡JOUR 3633 Media Law
3	‡ENGL/WLIT Upper Level Elective
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Total Hours</b>
<b>Fall Semester Year 4</b>	
3	‡ENGL/WLIT Upper Level Elective
3	‡ENGL/WLIT Upper Level Elective
3	JOUR elective
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
1	General Elective
<b>16</b>	<b>Total Hours</b>
<b>Spring Semester Year 4</b>	
3	‡ENGL/WLIT Upper Level Elective
3	‡ENGL/WLIT Upper Level Elective
3	JOUR elective
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

† Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter

‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Assessment Requirement:** Every senior English major must take the program assessment exam administered by the department each spring semester to graduate. Exam results will not affect GPA, although the student's score will be noted on his or her permanent academic record. This requirement may be waived in extraordinary circumstances by the department's Director of Undergraduate Studies. Contact your adviser for more information.

#### English (B.A.) Teacher Licensure Requirements:

Please refer to the Secondary Education Requirements for Fulbright College Students on page 118.

Students wanting to teach English in middle school should consult with a middle-level adviser in the College of Education and Health Professions.

SEE PAGE 343 FOR ENGLISH (ENGL) COURSES

## EUROPEAN STUDIES (EUST)

Fiona Davidson

Director of Studies

108 Ozark Hall

479-575-3879

<http://www.uark.edu/depts/eust/>

- Professors Booker (English), Dixon (geography), DuVal (English), Gay (economics), Heffernan (English), Kelley (political science), Montgomery (English), Pritchett (Spanish), Purvis (journalism and political science), Ricker (German), Tucker (Russian), Waligorski (political science),
- Associate Professors Adler (philosophy), Arenberg (French), Bailey (communication), Christiansen (French), Condray (German), Davidson (geography), Jacobs (art), Minar (philosophy), Scheide (communication), Senor (philosophy), Sonn (history)
- Assistant Professors Brogi (history), Comfort (French), Grob-Fitzgibbon (history), Rozier (Italian), Ruiz (Spanish)

Courses are offered in European studies, broadly defined as the study of the geography, culture, history, language, and politics of central Europe, including the British Isles.

Students wishing to maximize their knowledge of European studies and wishing to prepare for graduate training and/or employment in the private sector or government in positions related to the area may earn a combined major in European studies together with a major in another discipline. Students are required to coordinate their academic programs both with their advisers in the major department and with the director of the European Studies program. New students entering the program are required to notify both the major adviser and the director of studies of their intention to participate. Freshmen and sophomores considering this program are advised to begin their study of an appropriate foreign language as early as possible.

**Requirements for a Minor in European Studies:** Students wishing to minor in European studies must fulfill the EUST 2013 Introduction to Europe and EUST 4003 Colloquium requirements and the language requirements described below under the requirements for the major. They also must complete at least 12 hours from among the electives listed below. A maximum of six hours of electives may be submitted from any one department.

**Requirements for a Major in European Studies – Language Requirement:** Students must complete the equivalent of a third year of a modern European language, e.g., six hours of advanced 3000- or 4000-level work in French, German, or Spanish. Less commonly taught languages such as Portuguese or Italian may be used, subject to the availability of courses. Three to six hours in an approved study abroad program in Europe may substitute for all or part of this requirement. For native speakers of a European language other than English, this requirement is waived.

**Introduction to Europe:** Students must complete EUST 2013 Introduction to Europe, preferably before taking the colloquium.

**European Studies Colloquium:** Students must complete three to six hours of EUST 4003 European Studies Colloquium.

**Electives:** Students must complete at least 18 hours of credit, in addition to the language requirement and the European studies colloquium, from among the following or in individualized studies under the direction of faculty participating in the program. Students choosing to take individualized reading or directed research courses as part of the major or minor must obtain the approval of the director of the area studies program and their major adviser. In addition, the following conditions apply:

1. A maximum of nine hours may be submitted from any one department, and
2. A maximum of six hours may be submitted from courses taken in the student's major department.

The following courses may be taken in fulfillment of elective requirements:

**Anthropology**

ANTH 4253 People and Cultures of the World Regions  
(Region varies, counts for EUST if region is Europe)

**Art History**

ARHS 4873 Baroque Art  
ARHS 4883 19th Century European Art  
ARHS 4893 20th Century European Art

**English**

Any 3000- or 4000-level course in 18th, 19th, or 20th century British, Irish, Scots, or continental literature, any comparative literature course with significant European content.

**Foreign Languages**

Any 3000- or 4000-level French, German, Italian or peninsular Spanish literature or civilization course.

**Geography**

GEOG 4243 Political Geography  
GEOG 4783 Geography of Europe

**History**

HIST 3443 Modern Imperialism  
HIST 3533 World War II  
HIST 4103 Europe in the 19th Century  
HIST 4113 20th Century Europe to 1939  
HIST 4133 Society and Gender in Modern Europe  
HIST 4143 Intellectual History of Europe Since the Enlightenment  
HIST 4183 Great Britain 1780-1914  
HIST 4193 Great Britain 1901-1982  
HIST 4213 The Era of the French Revolution  
HIST 4223 France Since 1815  
HIST 4243 Germany 1789-1918  
HIST 4253 History of Germany 1918-1949

**Humanities**

HUMN 4913 Literary Reflections on the Holocaust

**Music History**

MUHS 3703 History of Music to 1800  
MUHS 3713 History of Music from 1800 to Present  
MUHS 4253 Special Topics in Music History (depending on topic)

**Philosophy**

PHIL 4033 Modern Phil – 17th and 18th Century  
PHIL 4043 19th Century Philosophy  
PHIL 4063 20th Century Continental Philosophy  
PHIL 4073 History of Analytic Philosophy

**Political Science**

PLSC 3553 Western European Politics  
PLSC 3963 Modern European Political Thought  
PLSC 4543 Government and Politics of Eastern Europe  
PLSC 4803 Foreign Policy Analysis

**Requirements for Honors in EUST:** The Honors Program in European Studies gives junior and senior students of high ability the opportunity to enroll in enriched courses and conduct independent research culminating in an honors thesis. In addition to satisfying the general Fulbright College requirements for graduation and the basic eligibility requirements for honors as established by the Honors Council, candidates for honors in European Studies must complete 12 hours of honors credit in partial satisfaction of requirements for the co-major. One to six of these may be thesis hours (EUST 399VH). The preferred method for satisfying the remaining hours is to enroll in the colloquium at least once for honors credit (EUST 4003H) and to take relevant honors colloquia or graduate courses (with permission) in one of the departments contributing

to this interdisciplinary area study. The thesis committee shall include a representative from the major discipline (in the case of multiple majors, from the discipline contributing most significantly to the topic). Successful completion of these requirements will be recognized by the award of the distinction “European Studies Scholar *Cum Laude*” at graduation. Higher degree distinctions are recommended only in exceptional cases and are based upon the whole of the candidate’s program of honors studies.

**FOREIGN LANGUAGES**

See World Languages, Literatures, and Cultures on page 196.

**FULBRIGHT INSTITUTE OF INTERNATIONAL RELATIONS (FIIR)**

Donald R. Kelley  
Director of the Institute  
428 Old Main  
479-575-2006  
<http://www.uark.edu/~fiir/>

The Fulbright Institute of International Relations is a center for study, research, and analysis of foreign policy and international affairs within the J. William Fulbright College of Arts and Sciences. The institute honors J. William Fulbright for his leadership in international relations and his lasting contributions to international education and better understanding among nations. In addition to instructional and research activities, the institute serves as a medium for international scholarly exchange and study programs, and sponsors conferences, seminars, public events, and publications on international relations.

**GENDER STUDIES (GNST)**

Susan Marren  
Chair of Studies  
333 Kimpel Hall  
479-575-4301  
[www.uark.edu/depts/h2p/gnst/index.html](http://www.uark.edu/depts/h2p/gnst/index.html)  
• Professors Schneider, Stephens, Swedenburg  
• Associate Professors Amason, Coon, D’Alisera, Fredrick, Gordon, Kahf, Marren, Parry, Robinson, Sonn, Starks, Striffler, Zajicek  
• Assistant Professors Arrington, Billings, Collins (S.), Corrigan, Erickson, House, Zuroski

The gender studies minor introduces students to the ways that various academic disciplines have examined women’s and men’s differing participation in work, the family, political systems, and creative endeavors. Courses explore sex and gender differences and such concepts as masculinity and femininity, essence and performance; distributions of power, work, and resources; and the symbolic representation of gender and identity in literature, religion, and art. The minor is often chosen by students interested in investigating materials previously neglected by scholars and in fresh perspectives on traditional subject matter.

**Requirements for a Minor in Gender Studies:** The student must complete 15 credit hours of regular courses listed below or special topics and seminars found in each semester’s schedule of classes under Gender Studies, including HUMN 2003 Introduction to Gender Studies:

ANTH 3163 Male and Female  
ANTH 3523 Gender and Politics in Latin America  
CLST 4003H Rome on Film

- COMM 3433 Family Communication
- COMM 3983 Rhetoric of American Women
- COMM 4333 Communication and Gender
- HIST 3083 Women and Christianity
- HIST 3923H Honors Colloquium: The History of Sexuality in the United States
- HIST 3923H Honors Colloquium: Russian and Soviet Women
- HIST 4133 Society and Gender in Modern Europe
- HIST 4413 New Women in the Middle East
- HUMN 2003 Intro. to Gender Studies
- HUMN 3923H Honors Intro. to Gender Studies
- HUMN 4243 Women in Music and Art
- LAST 4003 Latina Writers
- PLSC 4573 Gender and Politics
- SOCI 4133 The Family
- WLIT 3983 Women and Arabic Literature

**GEOSCIENCES (GEOS)**

Ralph Davis  
 Chair of the Department  
 113 Ozark Hall  
 479-575-3355  
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[geos@uark.edu](mailto:geos@uark.edu)

- Distinguished Professor Stahle
- Professors Brahana, Davis, Dixon, Guccione, Hehr, Konig, Manger, Mattioli, Paradise, Zachry
- Professors Emeritus Cleaveland, Macdonald, Steele
- Associate Professors Boss, Davidson, Graff
- Assistant Professors Cothren, Hausmann, Teng, Tullis
- Research Associate Professor Hays
- Adjunct Professors Jansma, Mock, Paillet
- Adjunct Assistant Professors Hubney, Bragg
- Adjunct Instructor Pollock

**Earth Science (ERSC)**

Fulbright College offers a major in earth science leading to the Bachelor of Science degree. Prospective secondary teachers may plan a program, in cooperation with the College of Education, which will satisfy the teacher licensure requirements. Students interested in environmental problems, teaching earth science in public schools, or wishing to pursue graduate work in either geography or geology will obtain much of the necessary foundation through this degree. Because the program outlined below lists only minimum science requirements, it is expected that most students will use some of their elective credit hours to strengthen their mathematics and science backgrounds in areas other than geography and geology. These areas of additional study will be determined through consultation between the student and the adviser. Students interested in this major should contact either Professor R.H. Konig or Professor J.C. Dixon.

**Requirements for the B.S. Degree with a Major in Earth Science:**

	<b>Hours</b>
Basic Courses	
Biology	8
Chemistry or Physics	8
GEOL 1113/1111L	4
GEOL 1133/1131L	4

MATH (2043, 2053, 2183 or 2554)	3-4
Advanced Courses	
ASTR 2003, ASTR 2001L	4
GEOG 3003, GEOS 3023, GEOG 4353 or GEOG 4363	
GEOL 2313, GEOL 3413, GEOL 4033 and GEOL 4924	9
At least 6 additional hours, at the 3000 level or above, in either geography or geology.	13 6
<b>Total Hours (depending on choice of MATH by student)</b>	<b>59-60</b>

In addition, all earth science majors must satisfy the senior-level writing requirement as specified by the geosciences department.

**Earth Science (B.S.) Teacher Licensure in Life/Earth Science or Physical/Earth Science Requirements:** Students wanting to teach science in middle or secondary school should consult with an adviser in the College of Education and Health Professions.

**Earth Science Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.S. Core Requirement Areas (areas a, b, c, d, e, and f) found on page 203 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-4	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
4	GEOL 1113/1111L General Geology
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16-17</b>	<b>Total Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3-4	†MATH 2043, 2053, 2183, 2554 (if needed) or Core from areas a, b, c, d or e (as needed)
4	GEOL 1133/1133L Environmental Geology
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16-17</b>	<b>Total Hours</b>
Fall Semester Year 2	
3	‡†GEOL 2313 Minerals and Rocks
4	CHEM or PHYS Course (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16</b>	<b>Total Hours</b>
Spring Semester Year 2	
3	‡†GEOL 3413 Sedimentary Rocks & Fossils
3	†Core from area f (if needed) or Advanced Level Elective
4	ASTR 2003/2001L
4	CHEM or PHYS Course (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>17</b>	<b>Total Hours</b>
Fall Semester Year 3	
4	BIOL Course (as needed)
3	‡†GEOG 3023 Cartography
3	Core from areas a, b, c, d or e (as needed)
3	†Core from area f (if still needed) or Advanced Level Elective
3	†Advanced Level Elective
<b>16</b>	<b>Total Hours</b>

Spring Semester Year 3	
4	BIOL Course (as needed)
3	‡†GEOG 3003 Conservation of Natural Resources
3	Core from areas a, b, c, d or e (as needed)
3	‡†GEOL 4033 Hydrogeology
<b>13</b>	<b>Total Hours</b>
Fall Semester Year 4	
3	‡†GEOG 4353 Elements of Weather (as needed) or Core from areas a, b, c, d, or e (as needed)
3	‡†Upper Level GEOG, GEOL, or GEOS Course
6	General Electives
3	†Advanced Level Elective
<b>15</b>	<b>Total Hours</b>
Spring Semester Year 4	
4	‡†GEOL 4924 Earth System History
3	‡†GEOG 4363 Climatology (as needed) or Core from areas a, b, c, d, or e (as needed)
3	‡†Upper Level GEOG, GEOL, or GEOS Course
3	†Advanced Level Elective
0-2	General Electives as needed
<b>13-15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Earth Science (B.S.) Teacher Licensure in Life/Earth Science or Physical/Earth Science Requirements:**

Students wanting to teach science in middle or secondary school should consult with an adviser in the College of Education and Health Professions.

**Geography (GEOG)**

Undergraduates who wish to major in geography should identify themselves to the department as soon as possible in order that they may develop a meaningful sequence of courses and take part in departmental activities. Two types of undergraduate programs with concentrations in geography are described below. Those interested in the graduate program should consult the *Graduate School Catalog*.

**Requirements for a Major in Geography:** The geography major of 30 hours leads to the B.A. degree in Fulbright College of Arts and Sciences. Requirements include GEOG 1123, GEOG 2003, GEOL 1131L, and GEOL 1133. A minimum of 15 hours must be at the 3000 level or above, including GEOS 3023, with a balance between regional and topical courses. The college writing requirement is to be met by completion of a term paper deemed satisfactory by the student's adviser and instructor of an upper-level geography course. The college writing requirement may also be met by the completion of an honors thesis. Students who expect to enter graduate school are encouraged to register for GEOG 410V their senior year. Electives in closely related fields are considered a part of the program and, upon prior approval of the department, six hours may be counted toward the major. Those planning to teach in secondary schools should note that they can both earn their degree in geography and qualify for a teaching certificate; they should consult with the department as early as possible.

**Geography Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a

core area. The course GEOG 2003 World Regional Geography counts as three hours toward University Core area e.

Fall Semester Year 1	
3	GEOG 1123 Human Geography
3	ENGL 1013 Composition I
3-4	MATH 1203 College Algebra or †MATH 2043, 2053, 2183 or 2554
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15-16</b>	<b>Semester Hours</b>
Spring Semester Year 1	
4	GEOL 1113/1111L General Geology
3	ENGL 1023 Composition II
3-4	†MATH 2043, 2053, 2183 or 2554 or Core from groups a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16-17</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	GEOG 2003 World Regional Geography
4	GEOG 1133/1131L Environmental Geology/Lab
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	‡†GEOG 3000 level or above Elective
3	†Core from area g (if needed) or †Advanced Level Elective
4	Core from group f (from Biological Sciences)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 3	
3	‡†GEOS 3023 Introduction to Cartography
3	‡†GEOG 3000-level or above Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
1	General Elective
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	‡†GEOG 3000-level or above Elective
3	‡†GEOG 3000-level or above Elective
3	†Core from area g (if needed) or †Advanced Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	‡†GEOG 3000-level or above Elective
3	‡†Upper Level Elective with Departmental Consent <sup>3</sup>
3	†Advanced Level Elective
6	General Electives
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	‡†Upper Level Elective with Departmental Consent <sup>3</sup>
3	‡†Upper Level ARSC Elective
3	†Advanced Level Elective
3	†Advanced Level Elective
3	General Elective
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Requirements for a Minor in Geography:** 15 hours in geography to include GEOG 1123. At least 6 hours must be numbered 3000 or above and must include one regional and one topical course.

**Requirements for a Minor in Historic Preservation:** 18 hours from each of the following:

- a. ARCH 1003, or both ARCH 1212 and 1222, or equivalent class in architecture
- b. GEOG 4063, or LARC 3413, or equivalent class in urban studies
- c. ANTH 4443, or equivalent class in cultural resources
- d. GEOL 1133, or equivalent class in the human and physical aspects of the Earth
- e. GEOS 3023 or equivalent class in spatial representation and visualization
- f. GEOG 3033

GEOG 3033 Building Materials Field Studies and Laboratory is the required field and laboratory-based capstone course that will require two weekends (Saturday and Sunday) for completion. The course has been specifically designed for this program and will discuss the nature of building materials (wood, brick, mortar and stone), their identification and properties, weathering and erosion theory, assessment and mitigation (i.e. cleaning, consolidants, innovative trends). It is suggested that this class be taken last in the program series.

One semester participation in the University of Arkansas' Rome Program will substitute for six (6) credits from class sections "a" (Architectural History) and "b" (Urban Studies) listed above. A supplemental program internship is suggested in addition to the classes required if the student's career path is in Historic Preservation.

**Cartography/Remote Sensing GIS Specialization:** This program gives students an opportunity to develop expertise in (1) cartography, map design and computer-assisted map production, (2) remote sensing and image interpretation, including photographic systems, sensor systems, and digital image processing, and (3) geographic information systems, including data sources, analytical techniques, and hardware/software systems.

To complete the specialization, a student is required to fulfill certain course requirements.

Required courses (9 hours):

GEOS 3023, GEOS 4413, and GEOS 3543 (same as ANTH 3543).

Elective courses (9 hours to be selected from the following):

GEOS 4523, GEOS 5423, GEOS 4553 (same as ANTH 4553),  
 GEOS 4583 (same as ANTH 4563), GEOS 4593 (same as ANTH 4593),  
 STAT 4003 (or other approved statistics course), CVEG 2053  
 (or other approved surveying course), CENG 4883

**Requirements for Departmental Honors in Geography:** Admission to the Departmental Honors Program in Geography is open to geography majors with a minimum grade-point average of 3.5 in all their work. All honors candidates must take 12 hours, which may include 6 hours of thesis, in Honors Studies. During the fall semester of either the junior or senior year the candidate will enroll in GEOG 399VH (no more than three hours of credit), an undergraduate seminar in geographical philosophy and methodology. During the senior year the honors candidate will complete the program by writing a senior honors paper under GEOG 399VH (no more than three hours of credit). Successful completion of the requirements will be recognized by the award of the distinction "Geography Scholar *Cum Laude*" at graduation. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate's program of honors studies.

**Geography (B.A.) Social Studies Teacher Licensure:**

Please refer to the Secondary Education Requirements for Fulbright College Students on page 118.

Students wanting to teach social studies in middle school should consult

with a middle level adviser in the College of Education and Health Professions.

SEE PAGE 348 FOR GEOGRAPHY (GEOG) COURSES

**Geology (GEOL)**

The department of geosciences offers the Bachelor of Science degree in geology and the Bachelor of Science degree in earth science. It is emphasized that students wishing to become practicing professional geologists should hold the Bachelor of Science degree in geology at a minimum. It is further recognized that practicing professional geologists typically hold a Master of Science degree. The education of students pursuing the Bachelor of Science in earth science degree should reflect general education in the liberal arts with emphasis in geology. The goal of the program leading to the Bachelor of Science degree in geology is to provide students with a broad spectrum of the various subdisciplines of geology, while at the same time honoring an emphasis in the traditional areas of mineralogy, igneous, metamorphic and sedimentary petrology, structural geology and stratigraphic principles. This curriculum will prepare students to enter graduate programs without deficiencies at the University of Arkansas or other established programs.

**Requirements for a Major in Geology leading to the B.S. Degree:** A minimum of 40 semester hours including GEOL 1113/1111L (or GEOL 3002), GEOL 1133/1131L, GEOL 2313, GEOG 3383, GEOL 3413, GEOL 3514, GEOL 4223, GEOL 4063 or GEOL 4433, GEOL 4863, GEOL 4924, GEOL 4666, and 9 additional geology course hours selected from GEOL or GEOS courses numbered 3000 or higher. Also, each student must complete CHEM 1103/1101L and CHEM 1123/1121L, College or University Physics (8 hours), MATH 2554 and MATH 2564 and a 3-hour upper-level science course approved by the student's adviser.

**Writing Requirement:** A scholarly writing assignment will be included in all geology courses numbered 2000 and above. Those papers submitted in geology courses 3000 and above will fulfill the Fulbright College writing requirement.

**Geology B.S. Nine-Semester Degree Program**

Students wishing to follow the nine-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following nine-semester plan refers to additional B.S. Core Requirement Areas (areas a, b, c, d, e, and f) found on page 203 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

This program does require a summer field camp after the junior year.

Fall Semester Year 1	
3	ENGL 1013 Composition I
4	†MATH 2554 Calculus I
2-4	GEOL 1113/1111L General Geology/Lab or ‡†GEOL 3002 Geology for Engineers
4	CHEM 1103/1101L University Chemistry I/ Lab
3	Core from areas a, b, c or e (as needed)
<b>16-18</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
4	†MATH 2564 Calculus II
4	GEOL 1133/1131L Environmental Geology/Lab
4	CHEM 1123/1121L University Chemistry II/Lab
3	Core from areas a, b, c or e (as needed)
<b>18</b>	<b>Semester Hours</b>

Fall Semester Year 2	
3	†GEOL 2313 Minerals and Rocks
4	PHYS 2054 University Physics I/Lab or PHYS 2013/2011 College Physics I/Lab
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	‡†GEOL 3413 Sedimentary Rocks and Fossils
4	PHYS 2074 University Physics II/Lab or PHYS 2033/2031 College Physics II/Lab
3	†Core from area f (if needed) or General Elective
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 3	
3	‡†GEOL 3383 Principles of Landscape Evolution/Lab
4	‡†GEOL 3514 Structural Geology
3	Core from areas a, b, c or e (as needed)
3	†Core from area f (if needed) or General Elective
3	General Elective
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	‡†GEOL 4223 Stratigraphy and Sedimentation/Lab
3	‡†GEOL 4863 Geological Data Analysis/Lab
6	General Electives
<b>12</b>	<b>Semester Hours</b>
Summer Semester Year 3	
6	‡† GEOL 4666 Geology Field Camp (Summer Session 1--1st 6 weeks)
Fall Semester Year 4	
3	‡†GEOL 4063 Principles of Geochemistry/Lab or GEOL 4433 Geophysics/Lab
6	‡†GEOL or GEOS electives numbered 3000 or above
3	Core from areas a, b, c or e (as needed)
<b>12</b>	<b>Semester Hours</b>
Spring Semester Year 4	
4	‡†GEOL 4924 Earth System History (senior capstone course)
3-6	‡†GEOL or GEOS electives numbered 3000 or above
6	General Electives
<b>13-16</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Writing Requirement:** A scholarly writing assignment will be included in all geology courses numbered 2000 and above. Those papers submitted in geology courses 3000 and above will fulfill the Fulbright College writing requirement.

**Requirements for a Minor in Geology:** A minor in geology shall be awarded upon completion of the following course work: GEOL 1113/1111L (or 3002), GEOL 1133/1131L, GEOL 2313, two courses at the 3000-level, and one course at the 4000 level. Students are advised to consult with a geology faculty member to develop the course work program that best complements their major area of study.

**Requirements for Departmental Honors in Geology:** The Departmental Honors Program in Geology provides upper-division undergraduate students with an opportunity to formally participate in geologic research activities. Honors candidates carry out independent study and research under the guidance of the geology faculty. Outstanding student achievement will

be recognized by awarding the distinction “Geology Scholar *Cum Laude*” at graduation. Higher degree distinctions may be awarded to truly outstanding students based upon the whole of their academic program and quality of honors research.

Honors candidates in geology must do the following:

1. Satisfy departmental and college requirements for a bachelor’s degree with honors,
2. Become a candidate no later than the second semester of their junior year,
3. Enroll in six hours of honors research GEOL 3901, GEOL 3911, GEOL 4922, GEOL 4932,
4. Take 12 hours in Honors Studies, which may include 6 hours of thesis,
5. Complete junior and senior honors courses GEOL 3901, GEOL 3911, GEOL 4922, GEOL 4932, and
6. Achieve a cumulative grade-point average of 3.30 in geology courses.

**Geology (B.S.) Teacher Licensure in Life/Earth Science or Physical/Earth Science Requirements:**

Students wanting to teach science in middle or secondary school should consult with an adviser in the College of Education and Health Professions.

For requirements for the M.S. degree in geology, see the *Graduate School Catalog*.

SEE PAGE 348 FOR GEOLOGY (GEOL) COURSES

**HISTORY (HIST)**

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 Chair of the Department  
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 479-575-3001  
<http://history.uark.edu>  
[history@uark.edu](mailto:history@uark.edu)

- Distinguished Professors West, Woods
- Alumni Distinguished Professor Emeritus Gatewood
- Professors Finlay, Gordon, Markham, McMath, Sutherland, Whayne, Wolpert
- Professors Emeriti Brown, Bukey, Chase, Engels, Kennedy, Vizzier
- Associate Professors Brogi, Coon, Robinson, Schweiger, Sloan (K.), Sonn, Starks, Williams
- Associate Professors Emeriti Edwards, Sloan (D.), Tucker
- Assistant Professors Arrington, Cai, Grob-Fitzgibbon, Pierce, White

**Requirements for a Major in History:** 36 semester hours to include:

- One of HIST 1003 or HIST 1113 or HIST 1113H
- One of HIST 1013 or HIST 1123 or HIST 1123H (4-year honors scholars must take 1113H and 1123H)
- HIST 2003
- HIST 2013
- HIST 4893

21 additional hours in history courses numbered 3000 or above, at least 12 hours of which must be 4000 or above.

Students must select 3 hours from each of the following groups:

**Group 1: Europe, including Britain and Russia**

- HIST 3003, HIST 3063, HIST 3443, HIST 3533, HIST 4003, HIST 4013, HIST 4023, HIST 4043, HIST 4053, HIST 4073, HIST 4083, HIST 4103, HIST 4113, HIST 4133, HIST 4143, HIST 4163, HIST 4183, HIST 4193, HIST 4213, HIST 4223, HIST 4243, HIST 4253, HIST 4283, HIST 4293

**Group 2: Africa, Asia, Latin America, Near East, Russia**

HIST 3033, HIST 3043, HIST 3203, HIST 3213, HIST 3223, HIST 3233, HIST 3473, HIST 4283, HIST 4293, HIST 4313, HIST 4353, HIST 4373, HIST 4383, HIST 4393, HIST 4413, HIST 4433, HIST 4783, HIST 4823

**Group 3: United States**

HIST 3263, HIST 3323, HIST 3383, HIST 3583, HIST 3593, HIST 4463, HIST 4503, HIST 4513, HIST 4533, HIST 4543, HIST 4563, HIST 4573, HIST 4583, HIST 4613, HIST 4623, HIST 4643, HIST 4653, HIST 4663, HIST 4673, HIST 4703, HIST 4723, HIST 4733, HIST 4763

Students may not receive credit for 3383 AND 4583. Russia may be counted for only one area. In consultation with an adviser, students who are history majors are encouraged to design a program of study with both breadth and depth.

**Writing Requirement:** To fulfill the Fulbright College writing requirement, each history major will submit, prior to graduation, a substantial research or analytical paper, with a grade of “A” or “B” from an upper-division history course (3000, 4000, 5000 level) to his or her departmental adviser. The required senior capstone seminar, HIST 4893, is designed to give history majors the opportunity and guidance to produce a paper to meet the Fulbright College requirement, but students may also submit a paper from another course. Satisfactory completion of an honors project or senior thesis may also fulfill this requirement.

**Requirements for Departmental Honors in History:** Admission to the Departmental Honors Program in History is open to history majors with a minimum grade-point average of 3.5 in all their work. Prospective Departmental Honors students must take 12 hours in Honors Studies, of which 6 hours must include HIST 3973H Honors Methods (Spring semester, junior year and HIST 399VH, Honors History Thesis, Fall or Spring semester, senior year). During the senior year, the honors candidate will complete the program by writing an honors thesis. Successful completion of the program will be recognized by the award of the distinction “History Scholar *Cum Laude*” at graduation. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate’s program of honors studies.

**History Eight-Semester Degree Program**

Students who elect to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
3	HIST 2003 History of the American People to 1877 or HIST 1003 Institutions and Ideas of Western Civilization I or HIST 1113 Institutions and Ideas of World Civilizations I
3	Core from areas a, c, d or e (as needed)
3	Core from areas a, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3	†MATH 2043, 2053, 2183, 2554 or Core from areas a, c, d or e (as needed)
3	HIST 2013 History of the American People, 1877 to Present or HIST 1013 Institutions and Ideas of Western Civilization II or HIST 1123 Institutions and Ideas of World Civilizations II
3	Core from areas a, c, d or e (as needed)

4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	HIST 1003 Institutions and Ideas of Western Civilization I or HIST 1113 Institutions and Ideas of World Civilizations I or HIST 2003 History of the American People to 1877 (if not taken earlier)
3	Core from areas a, c, d or e (as needed)
3	Core from areas a, c, d or e (as needed)
3	Core from areas a, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	HIST 1013 Institutions and Ideas of Western Civilization II or HIST 1123 Institutions and Ideas of World Civilizations II or HIST 2013 History of the American People, 1877 to Present (if not taken earlier)
3	†Core from area g (if required) or †Advanced Level Elective
3	Core from areas a, c, d or e (as needed)
3	Core from areas a, c, d or e (as needed)
3	General Elective
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 3	
3	‡†HIST 3000 or 4000 level (from U.S., European or Other as needed)
3	‡†HIST 3000 or 4000 level (from U.S., European or Other as needed) 1
3	Core from areas a, c, d or e (as needed)
3	Core from areas a, c, d or e (as needed)
4	General Electives
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	‡†HIST 3000 or 4000 level (from U.S., European or Other as needed) 1
3	‡†HIST 3000 or 4000 level (from U.S., European or Other as needed) 1
3	†Core from area g (if still needed) or †Advanced Level Elective
3	Core from areas a, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	‡†HIST 4000 level (from U.S., European or Other as needed)
3	‡†HIST 4000 level (from U.S., European or Other as needed)
3	Core from areas a, c, d or e (as needed)
3	†Advanced Level Elective
3	HIST 4893 Senior Capstone Seminar
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	‡†HIST 4000 level (from U.S., European or Other as needed)
3	‡†HIST 4000 level (from U.S., European or Other as needed)
3	†Advanced Level Elective
3	Core from areas a, c, d, or e (as needed)
3	General Elective
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

† Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter  
 ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Requirements for a Minor in History:** 15 semester hours not to include HIST 1003, HIST 1013, HIST 1113, or HIST 1123. A student must notify the department of his or her intent to minor.

For the combined major in history and African-American studies, see page 129. For freshman history, see HIST 1003, 1013, 1113 and 1123.

**History (B.A.) Social Studies Teacher Licensure Requirements:**

Please refer to the Secondary Education Requirements for Fulbright College Students on page 118.

Students who desire to teach social studies in middle school should



consult with a middle-level adviser in the College of Education and Health Professions.

For requirements for advanced degrees in history, see the *Graduate School Catalog*.

For information regarding departmental scholarships, visit the Web at [http://history.uark.edu/index.php/ugrd\\_scholarships](http://history.uark.edu/index.php/ugrd_scholarships).

**HONORS STUDIES**

Sidney Burris  
 Director of Honors Studies  
 517 Old Main  
 479-575-2509

<http://www.uark.edu/honors>

SEE PAGE 126 FOR FULBRIGHT COLLEGE HONORS INFORMATION AND REQUIREMENTS.

**HUMANITIES (HUMN)**

David Fredrick  
 Chair of Studies  
 506 Old Main  
 479-575-6776

<http://www.uark.edu/depts/h2p/index.html>

- Distinguished Professor West
- Professors Burris, Cochran, Goodstein, Quinn, Stephens
- Adjunct Professor Vitali
- Associate Professors Adams, Coon, Davidson, Fredrick, Gordon, Jacobs, McCray, Robinson, Scheide, Sexton
- Assistant Professors Arrington, Tucker
- Adjunct Assistant Professor Del Gesso

The Humanities Program supports the Honors Humanities Project (H2P) as well as interdisciplinary coursework in Gender Studies, Medieval and Renaissance Studies, and Arts and Aesthetics. Humanities also sponsors courses in Classics, Medieval, and Renaissance cultures taught every semester and every other summer (during even years) at the Rome Study Center.

SEE PAGE 358 FOR HUMANITIES (HUMN) COURSES

**INTERNATIONAL RELATIONS (IREL)**

Hoyt H. Purvis  
 Chair of Studies  
 116 Kimpel Hall  
 479-575-3601  
<http://www.uark.edu/~arsc/IR>

The J. William Fulbright College of Arts and Sciences is strongly committed to the study of international relations and this program offers students a strong foundation for more advanced study as well as preparation for careers in an increasingly global economy and society. The degree offers a broad interdisciplinary course of study with a strong intercultural and international focus. Intensive language study and study abroad are especially encouraged.

<b>Requirements for a Major in International Relations:</b>	Hours
FIIR 2813 Intro. to International Relations (same as PLSC 2813)	3

Six hours of upper-division foreign language courses or equivalent. (May be satisfied with approved study abroad courses related to language field. If upper-division language courses or unavailable in field of study, (appropriate courses will be approved as substitutes.)	6
ECON 2013 Principles of Macroeconomics and ECON 2023 Principles of Microeconomics, or ECON 2143 Basic Economics and one upper-level international economics course: ECON 4633 International Trade Policy, or ECON 4643 International Macroeconomics & Finance	6-9
From the following (depending on ECON option selected): (Courses must be selected from at least two departments.)	6-9
COMM 4343 Intercultural Communication	
ECON 4633 International Trade Policy, or	
ECON 4643 International Macroeconomics & Finance* (if not used to meet ECON requirement)	
GEOG 2003 World Regional Geography	
GEOG 4243 Political Geography	
HIST 3063 Military History	
HIST 3443 Modern Imperialism	
HIST 3533 World War II	
HIST 3583 U.S. and Vietnam	
HIST 4763 Diplomatic History	
PLSC 3533 Political Development	
PLSC 3803 International Organization	
PLSC 3813 International Law	
PLSC 3823 Theories of International Relations	
PLSC 3853 American Foreign Policy	
PLSC 4513 Creating Democracies	
PLSC 4803 Foreign Policy Analysis	
PLSC 4813 Politics of the Cold War	
<b>Area Studies Concentration</b>	9
Three hours of an Area Studies Colloquium (AIST, EUST, LAST, MEST, or RSST 4003) and approved area studies courses from GEOG, HIST, or PLSC. (A second Area Studies Colloquium may be taken with advanced approval.)	
FIIR (IREL) 4003 International Relations Seminar	3
(Credits in study-abroad courses on an international topic or an honors colloquium on an international topic may be applied toward the major if approved in advance. Such courses may not be substituted for FIIR/PLSC 2813, the ECON requirement, or FIIR 4003.)	

**International Relations Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional BA Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-4	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
3	PLSC 2003 American Nat'l. Government (meets requirement in core area b)
3	Foreign Language (as needed; see core area c)

3	FIIR 2813 Intro. to International Relations or Core from areas a or d (as needed)
<b>15-16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 1</b>	
3	ENGL 1023 Composition II
3	†MATH 2043, 2053, 2183 or Core from areas a or d (as needed)
3	FIIR 2813 Intro. to International Relations or Core from areas a or d (as needed)
3	Foreign Language (as needed; see core area c)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 2</b>	
3	ECON 2143 Basic Economics or †ECON 2013 Principles of Macroeconomics
3	Foreign Language (as needed; see core area c)
3	HIST 1003 Institutions and Ideas of Western Civilization I
3	Core from areas a or d (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 2</b>	
3	†Core area g (if required) or GEOG 2003 World Regional Geography
3	Foreign Language (as needed; see core area c)
3	HIST 1013 Western Civilization II
3	†ECON 2023 Microeconomics (if ECON 2013 completed in fall 2) or †‡IREL Course from list
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 3</b>	
3	†‡Upper Level Foreign Language
3	†‡ECON 4633 International Trade Policy or ECON 4643 International Macroeconomics & Fin.
3	GEOG 2003 World Regional Geography (if needed) or †‡IREL Course from list
3	†‡Area Studies Course
3	Core from area a or d (as needed)
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
3	†‡Upper Level Foreign Language
3	Core from area a or d (as needed)
3	Core from area a or d (as needed)
3	Core from area a or d (as needed)
3	†‡Area Studies Colloquium or Minor Requirement Course
<b>15</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	†‡FIIR 4003 International Relations Seminar (Completes Senior Writing Requirement)
3	†‡Area Studies Colloquium (if needed) or Other Area Studies Course
3	†‡IREL Course from list
3	Minor Requirement Course
3	Minor Requirement Course
1	Elective
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3	†‡IREL Course from list or Minor Requirement Course (as needed)
3	†‡Area Studies Course or Minor Requirement Course (as needed)
3	Minor Requirement Course (as needed)
3	Minor Requirement Course (as needed)
3	Core from areas a or d (as needed)
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

† Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter  
 ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Disciplinary or Area Studies Minor**

Students must complete a minor (15-18 hours) in one of these disciplines, consisting of *approved international-related courses*:

- Anthropology (15)
- Economics (18)
- Geography (15)
- History (15)
- Political Science (18)
- Asian Studies (15)
- European Studies (15)
- Latin American Studies (15 and language requirements)
- Middle East Studies (18)
- Russian Studies (18)

**Approved Courses for Minor in Anthropology for International Relations majors:**

- ANTH 3003 World Prehistory
- ANTH 3033 Egyptology
- ANTH 3123 Anthropology of Religion
- ANTH 3503 Power and Popular Protest in Latin America
- ANTH 3523 Gender and Politics in Latin America
- ANTH 3923H Honors Colloquium (for honors students if the topic is international-related)
- ANTH 4123 Ancient Middle East
- ANTH 4253 Peoples and Cultures of World Regions
- ANTH 4513 African Religions: Gods, Witches, Ancestors
- ANTH 4533 Middle East Culture
- ANTH 4583 Peoples and Cultures of Sub-Saharan Africa

**Approved Courses for Minor in Economics for International Relations majors:**

- ECON 2013 Principles of Macroeconomics and ECON 2023 Principles of Microeconomics or ECON 2143\* Basic Economics
  - ECON 3033 Microeconomic Theory
  - ECON 3133 Macroeconomic Theory
  - ECON 4633 International Trade Policy
  - ECON 4643 International Macroeconomics & Finance
- \*Students who take ECON 2143 will be required to take an additional upper division economics course to complete the minor.

**Approved Courses for Minor in Geography for International Relations majors:**

- GEOG 2003 World Regional Geography
- GEOG 2023 Economic Geography
- GEOG 3353 Economic Geography of NAFTA
- GEOG 3923H Honors Colloquium (for honors students if the topic is international-related)
- GEOG 4033 Geography of the Middle East
- GEOG 4243 Political Geography
- GEOG 4723 Australia and the Pacific Islands
- GEOG 4783 Geography of Europe
- GEOG 4793 Geographic Concepts for Global Studies

**Approved courses for minor in History for International Relations majors:**

- HIST 1113 Institutions and Ideas of World Civilization
- HIST 1113H Honors World Civilization
- HIST 1123 Institutions and Ideas of World Civilization
- HIST 1123H Honors World Civilization
- HIST 3003 History of Christianity
- HIST 3033 Islamic Civilization
- HIST 3043 History of the Modern Middle East
- HIST 3063 Military History

- HIST 3203 Colonial Latin America
- HIST 3213 Modern Latin America
- HIST 3443 Modern Imperialism
- HIST 3473 Palestine and Israel in Modern Times
- HIST 3503 Far East in Modern Times
- HIST 3533 World War II
- HIST 3583 The United States and Vietnam, 1945-1975
- HIST 3923H Honors Colloquium (for honors students if the topic is international-related)
- HIST 4003 Greece and the Ancient Near East
- HIST 4013 Alexander the Great and the Hellenistic World
- HIST 4023 The Roman Republic and Empire
- HIST 4043 Late Antiquity and the Early Middle Ages
- HIST 4053 Late Middle Ages
- HIST 4073 Renaissance and Reformation, 1300-1600
- HIST 4083 Early Modern Europe, 1600-1800
- HIST 4103 Europe in the 19th Century
- HIST 4113 Twentieth Century Europe, 1898-1939
- HIST 4133 Society and Gender in Modern Europe
- HIST 4143 Intellectual History of Europe Since the Enlightenment
- HIST 4163 Tudor-Stuart England
- HIST 4193 Great Britain, 1901-1982: Empire to Welfare State
- HIST 4213 The Era of the French Revolution
- HIST 4223 France Since 1815
- HIST 4243 Germany, 1789-1918
- HIST 4253 History of Germany, 1918-1949
- HIST 4283 Russia to 1861
- HIST 4293 Russia Since 1861
- HIST 4313 History of China to 1644
- HIST 4323 Modern China
- HIST 4343 Modern Japan
- HIST 4353 Middle East 600-1500
- HIST 4373 Mongol & Mamluk Middle East 1250-1520
- HIST 4383 The History of Sub-Saharan Africa
- HIST 4393 The Ottoman Empire and Iran 1300-1722
- HIST 4413 New Women in the Middle East
- HIST 4433 Social and Cultural History of the Modern Middle East
- HIST 4463 The American Frontier
- HIST 4473 Environmental History
- HIST 4763 Diplomatic History of U.S. 1900 to 1945

**Approved courses for Minor in Political Science for International Relations majors:**

18 hours including PLSC 2003 or PLSC 2013. At least nine of these hours must be in courses numbered 3000 or above, and courses must be chosen from at least two of the five political science fields.

- PLSC 2813 Intro. to International Relations
- PLSC 3503 Government and Politics of East Asia
- PLSC 3523 Government and Politics of the Middle East
- PLSC 3533 Political Development
- PLSC 3553 Western European Politics
- PLSC 3573 Government and Politics of Latin America
- PLSC 3803 International Organization
- PLSC 3813 International Law
- PLSC 3823 Theories of International Relations
- PLSC 3853 American Foreign Policy
- PLSC 4503 African Politics
- PLSC 4513 Creating Democracies
- PLSC 4543 Government and Politics of Eastern Europe
- PLSC 4563 Government and Politics of Russia
- PLSC 4583 Political Economy of the Middle East

- PLSC 4593 Islam and Politics
- PLSC 4803 Foreign Policy Analysis
- PLSC 4813 Politics of the Cold War
- PLSC 4823 Foreign Policy of East Asia
- PLSC 4843 Middle East in World Affairs
- PLSC 4873 Inter-American Politics

**Approved Courses for Minor in Asian Studies:**

Students must complete 15 credit hours of courses from the list of approved Asian Studies courses in the catalog, including at least three hours in AIST 4003 Asian Studies Colloquium.

**Approved Courses for Minor in European Studies:**

Students must fulfill the Colloquium (EUST 4003) and language requirements for European Studies minors described in the catalog and must complete 12 hours from the list of approved European Studies courses in the catalog, including at least three hours in EUST 4003 European Studies Colloquium.

**Approved Courses for Minor in Latin American Studies:**

Students must fulfill the Colloquium (LAST 4003) and language requirements for Latin American Studies minors described in the catalog and must complete 12 hours from the list of approved Latin American studies courses listed in the catalog.

**Approved Courses for Minor in Middle East Studies:**

Students must complete a minimum of 9 hours of approved MEST core courses, 3 hours in the MEST Colloquium (MEST) 4003, and 6 hours of Arabic beyond the 12 credit college language requirement.

**Approved Courses for Minor in Russian Studies:**

Students must fulfill the Colloquium (RSST 4003) and language requirements for Russian Studies described in the catalog and must complete 12 hours from approved Russian Studies courses listed in the catalog.

**JOURNALISM (JOUR),  
THE WALTER J. LEMKE DEPARTMENT OF**

Patsy G. Watkins  
Chair of the Department  
116 Kimpel Hall  
479-575-3601

<http://uark.edu/journalism>

- Professors Carpenter, Foley, Purvis, Wicks
- Professors Emeriti Ingenthron, Reed
- Associate Professors Jordan, Miller, Stockdell, Watkins
- Associate Professor Emerita Montgomery
- Assistant Professor Fosu
- Instructors Ledbetter, Martin, Shurlds
- Instructor Emerita Belzung

The purpose of the Walter J. Lemke Department of Journalism is to provide students with knowledge of the history, theory, and ethics of mass communications, to educate students in journalistic skills, including the ability to express themselves logically and clearly, and to guide them in securing specialized knowledge of society appropriate to journalistic careers.

Journalism majors must fulfill the requirements for either the news/editorial option, the advertising/public relations option, or the broadcast option. A minimum of 84-85 hours in non-journalism courses must be applied toward the 124 hours required by the college for a Bachelor of Arts degree.

**Writing Requirement:** Students may meet the college writing requirement by producing a satisfactory honors thesis, or research/analytical paper. The research/analytical paper may be written in any journalism course numbered JOUR 3133 or higher or by registering for JOUR 498V. Rules

governing the research/analytical paper may be obtained from the journalism department or from any journalism professor.

**Requirements for a B.A. degree in Journalism:** A minimum of 33 semester hours in journalism, including JOUR 1023, JOUR 1033, and JOUR 3633. A minimum grade of “C” is required in all journalism courses that serve as prerequisites for advanced journalism courses. In certain courses a minimum grade of “B” is required. Also required is ENGL 2013. Students must select a sequence when they enter the department. Specific courses in addition to the journalism courses are required only for the advertising/public relations sequence. The requirements for each sequence are as follows:

**News/Editorial:** JOUR 2013, JOUR 3013, JOUR 3123, and either JOUR 3023 or JOUR 4553 are required, plus any four additional journalism courses for which the student has prerequisites. It is recommended that one course choice be an internship.

**Broadcast:** JOUR 2032/2031L, JOUR 3072/3071L, JOUR 4863, and JOUR 4873 are required, plus any four additional journalism courses for which the student has prerequisites. It is recommended that one course choice be an internship and another choice be JOUR 4883/4880L.

**Advertising/Public Relations:** JOUR 3723, JOUR 3743, JOUR 4143, JOUR 4423, and JOUR 4453 are required, plus any three additional journalism courses for which the student has prerequisites. It is recommended that one course choice be an internship. Also required are ECON 2143, MKTG 3433, and MKTG 3553. Students seeking admission to the Ad/PR Sequence must have an overall GPA of 2.25 or higher: 1) to be admitted to the Ad/PR Sequence, and 2) to enroll in JOUR 3723 and JOUR 3743. Ad/PR Sequence students are required to earn a grade of “B” or higher in both JOUR 3723 and JOUR 3743 to qualify to take all upper level Ad/PR sequence courses. Students may retake JOUR 3723 and JOUR 3743 only once to earn a grade of “B” or higher.

**Journalism Eight-Semester Degree Programs**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The journalism major includes three sequences: News/Editorial, Broadcast, and Advertising/Public Relations. Each is shown below.

The following eight-semester plans refer to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

**Advertising and Public Relations Sequence**

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-4	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15-16</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3-4	†MATH 2043, 2053, 2183 or 2554 or Core from areas a, b, c, d or e (as needed)
3	JOUR 1023 Media and Society or JOUR 1033 Fundamentals of Journalism (as needed)
4	Core from area f (as needed)
3	ECON 2143 Basic Economics or Core from areas a, b, c, d or e (as needed)
<b>16-17</b>	<b>Semester Hours</b>

Fall Semester Year 2	
3	ECON 2143 Basic Econ. (if needed) or Core from areas a, b, c, d or e (as needed)
3	JOUR 1023 Media and Society or JOUR 1033 Fundamentals of Journalism (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	†ENGL 2013 (completes core group g) if needed or †Advanced Level Elective
3	†MKTG 3433 Introduction to Marketing Strategy
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 3	
3	†‡JOUR 3723 Advertising Principles or JOUR †‡3743 Public Relations Principles
3	†MKTG 3553 Consumer Behavior
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
3	†‡Upper-level elective in Fulbright College
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	†‡JOUR 3723 Advertising Principles (if not taken earlier) or †‡JOUR 3743 Public Rel. Principles
3	†ENGL 2013 (completes core group g) if not taken earlier or †Advanced Level Elective
3	†‡JOUR 3633 Media Law
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	JOUR Elective
3	†‡JOUR 4143 Public Relations Writing (or in Spring Semester 4)
3	†‡JOUR 4423 Creative Strategy & Execution (or in Spring Semester 4)
3	†‡JOUR 4453 Media Planning & Strategy (or in Spring Semester 4)
3	†Advanced Level Elective
1	General Elective
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	JOUR Elective
3	JOUR Elective
3	†Advanced Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (if needed)
3	†‡Upper-level elective in Fulbright College (if needed) or General Elective
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

† Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter  
 ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Broadcast Sequence Broadcast Sequence**

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-4	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
3	JOUR 1023 Media and Society
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15-16</b>	<b>Semester Hours</b>

Spring Semester Year 1	
3	ENGL 1023 Composition II
3	†MATH 2043, 2053, 2183 or Core from areas a, b, c, d or e (as needed)
3	JOUR 1033 Fundamentals of Journalism
4	Core from area f (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	†JOUR 2032/2031L Broadcast News Reporting I / Lab
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	General Elective
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	†ENGL 2013 Essay Writing (completes core area g) or †Advanced Level Elective
3	‡JOUR 3072/3071L Broadcast News Reporting II/Lab
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	General Elective
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 3	
3	‡JOUR 4863 Television News Reporting I/Lab
3	‡JOUR 3633 Media Law
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	‡JOUR 4873 Television News Reporting II/Lab
3	‡JOUR upper level elective
3	†ENGL 2013 if still needed (completes core area g) or †Advanced Level Elective
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	‡JOUR upper level elective
3	‡JOUR upper level elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	†Advanced Level Elective
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	‡JOUR upper level elective
1	‡JOUR 498V Journalism Writing Requirement or Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	†Advanced Level Elective
3	General Elective
<b>16</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**News/Editorial Sequence**

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-4	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
3	JOUR 1023 Media and Society
3	Core from areas a, b, c, d or e (as needed)

3	Core from areas a, b, c, d or e (as needed)
<b>15-16</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3	†MATH 2043, 2053, 2183 or Core from areas a, b, c, d or e (as needed)
3	JOUR 1033 Fundamentals of Journalism
4	Core from area f (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	†JOUR 2013 News Reporting I
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	General Elective
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	†ENGL 2013 Essay Writing (completes core area g) or †Advanced Level Elective
3	‡JOUR 3013 Editing
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	General Elective
<b>15</b>	<b>Total Hours</b>
Fall Semester Year 3	
3	‡JOUR 3123 Feature Writing
3	‡JOUR 3633 Media Law
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	‡JOUR 3023 News Reporting II or JOUR 4553 Magazine Editing and Production I
3	‡JOUR upper level elective
3	†ENGL 2013 if still needed (completes core area g) or †Advanced Level Elective
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	‡JOUR upper level elective
3	‡JOUR upper level elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	†Advanced Level Elective
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	‡JOUR upper level elective
1	‡JOUR 498V Journalism Writing Requirement or Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	†Advanced Level Elective
3	General Elective
<b>16</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Requirements for Departmental Honors in Journalism:** The Journalism Honors Program gives upper-division undergraduates a chance to pursue journalistic research in the context of other academic disciplines. Honors candidates carry out independent study and research under the guidance of the journalism

faculty and participate in honors classes in journalism and at least one other discipline. Outstanding student achievement will be recognized by the award of distinction “Journalism Scholar *Cum Laude*” at graduation. Higher degree distinctions are recommended only in cases of exceptional achievement and are based on the candidate’s total honors studies program. To be considered for such distinctions, students must earn a minimum cumulative 3.50 grade-point average in journalism.

Journalism Departmental Honors students must satisfy the general Fulbright College honors requirements as stated elsewhere in this catalog. In addition, for journalism departmental honors, they must complete a minimum of 12 hours in honors credits, with thesis credit determined by departmental rules. These requirements are specified as follows:

Journalism Four-Year and Departmental Honors students must:

1. enter the program no later than the first semester of their junior year, and register for thesis beginning with the first semester of the junior year,
2. complete at least one journalism honors colloquium,
3. complete the journalism honors core research course JOUR 5043,
4. complete an approved honors colloquium in a second discipline,
5. complete and orally defend an honors thesis based on honors courses of study, and
6. earn a cumulative 3.50 grade-point average in journalism courses.

Four-Year Honors students who would like to major in journalism must meet all requirements for Journalism Department Honors.

More specific information on the Journalism Departmental Honors program, including the requirements for Four-Year Honors students, is available from the Journalism Department Honors adviser.

**Combined Majors**

**Combined Major in Journalism and Political Science:** The combined major in journalism and political science has been developed for students who wish to combine their strong interests in both journalism and political science. There are two journalism options available: Public Affairs Reporting and Political Advertising and Promotion. The journalism requirement may be satisfied by 24 semester hours of courses, including JOUR 1023, JOUR 1033, and JOUR 3633. The remaining hours are filled from the following options.

Those wishing to emphasize Public Affairs Reporting can choose from either print or broadcast news:

Print News: JOUR 2013, JOUR 3013, JOUR 3023, JOUR 4043, and one additional journalism course.

Broadcast News: JOUR 2032/2031L, JOUR 3073, JOUR 4043, JOUR 4863, and JOUR 4873.

Those wishing to emphasize Political Advertising and Promotion take the following courses: JOUR 3723, JOUR 3743, JOUR 4043, and 6 hours of advanced journalism courses. Students should check course prerequisites.

The political science requirement may be satisfied by 24 semester hours of courses, including PLSC 2003, PLSC 2013, PLSC 4373, and 15 additional hours of advanced political science courses elected from one or the other of two field concentrations. Those wishing to emphasize American political affairs may elect the additional hours from the following:

PLSC 3103	PLSC 3113	PLSC 3153	PLSC 3183
PLSC 3223	PLSC 3233	PLSC 3243	PLSC 3253
PLSC 3603	PLSC 3853	PLSC 3923H	PLSC 3913
PLSC 3933	PLSC 394V	PLSC 3973	PLSC 3983
PLSC 399VH	PLSC 4193	PLSC 4203	PLSC 4213
PLSC 4243	PLSC 4253	PLSC 4273	PLSC 4813
PLSC 4823	PLSC 4903		

Alternatively, a foreign affairs concentration may be pursued by electing the advanced hours from the following courses:

PLSC 3503	PLSC 3523	PLSC 3533	PLSC 3553
PLSC 3573	PLSC 3603	PLSC 3803	PLSC 3813

PLSC 3823	PLSC 3853	PLSC 3923H
PLSC 394V	PLSC 3953	PLSC 3963
PLSC 399VH	PLSC 4513	PLSC 4563
PLSC 4573	PLSC 4593	PLSC 4803
PLSC 4843	PLSC 4873	

**Journalism/Political Science Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following 8-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-4	MATH 1203 (if required) or †MATH 2043, 2053, 2183 or 2554
3	JOUR 1023 Media and Society or JOUR 1033 Fundamentals of Journalism
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15-16</b>	<b>Total Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3-4	†MATH 2043, 2053, 2183 or 2554 or Core from areas a, b, c, d or e (as needed)
3	PLSC 2003 American National Government (meets a requirement for core area b)
3	JOUR 1023 Media and Society or JOUR 1033 Fundamentals of Journalism (as needed)
4	Core from area f (as needed)
<b>16-17</b>	<b>Total Hours</b>
Fall Semester Year 2	
3	PLSC 2013 Introduction to Comparative Politics (meets a requirement for core area e)
3	†JOUR course from selected concentration
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Total Hours</b>
Spring Semester Year 2	
3	†Core from area g (if needed) or †Advanced Level Elective
3	†‡PLSC course from selected concentration
3	†JOUR course from selected concentration
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Total Hours</b>
Fall Semester Year 3	
3	†‡ JOUR course from selected concentration
3	†‡ PLSC course from selected concentration
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Total Hours</b>
Spring Semester Year 3	
3	†‡ JOUR course from selected concentration or †‡JOUR 3633 Media Law
3	†‡ PLSC course from selected concentration
3	†Core from area g (if still needed) or †Advanced Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Total Hours</b>

Fall Semester Year 4	
3	†‡ JOUR course from selected concentration
3	†‡ PLSC 4373 Political Communication
3	†‡ PLSC course from selected concentration
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Total Hours</b>
Spring Semester Year 4	
3	†‡ PLSC course from selected concentration
3	†‡ JOUR course from selected concentration or †‡JOUR 3633 Media Law (as needed)
3	Core from areas a, b, c, d or e (as needed)
7	General Electives
<b>16</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Combined Major in Journalism and English:** The combined major in journalism and English is recommended for those students who have a strong interest in these two related fields. The journalism requirement for the combined major is 24 semester hours including JOUR 1023, JOUR 1033, and JOUR 3633. The remaining 15 hours are filled from one of the two following options:

- Print: JOUR 2013, JOUR 3013, JOUR 3023, JOUR 3123, and one additional journalism course.
- Broadcast: JOUR 2023/2031L, JOUR 3072/3071L, JOUR 4863, JOUR 4873, and one additional journalism course

For the eight-semester program plan and the English course requirements for the combined major see notes under the department of English on page 157.

**Journalism (B.A.) Teacher Licensure Requirements:**

Students interested in obtaining teacher licensure may not obtain licensure in journalism alone. Licensure in another discipline must be obtained, and journalism may be added as an additional area of licensure. Please refer to the Secondary Education Requirements for Fulbright College Students on page 118 or contact your departmental adviser or an adviser in the College of Education and Health Professions.

**Journalism for Agricultural Majors:** A list of 18 hours of journalism courses is available for students in the College of Agricultural, Food and Life Sciences. See the Bumpers College section of this catalog for these journalism courses. This program is recommended for students who plan to work in public relations in these areas. It is also recommended for students who expect to enter extension work in agriculture and home economics and who will use the mass media to promote their programs.

SEE PAGE 361 FOR JOURNALISM (JOUR) COURSES

**LATIN AMERICAN AND LATINO STUDIES (LAST)**

Steven M. Bell  
 Chair of Studies  
 605 Kimpel Hall  
 479-575-2951  
<http://www.uark.edu/depts/lastinfo/>

- Professors Britton, Horowitz (economics), Graff, Hehr (geography), Purvis (journalism and political science), Restrepo (foreign languages), Sloan (music)
- Associate Professors Bell (foreign languages), Erickson (anthropology),

- Kali, Méndez (economics), Sloan (history), Ryan (political science)
- Assistant Professors Ruiz, Villalobos (foreign languages), Reyes (economics), Bridges (psychology), Corrigan (communications)

Students interested in Latin America and wishing to maximize their potential for academic, business, professional, or government careers related to the area, may earn a combined major or a minor in Latin American and Latino studies together with a major in another discipline in Fulbright College. Advice on appropriate combinations of Latin American and Latino studies with other majors as well as individual approval of such combinations may be obtained from the LAST program director. New students in this program must officially declare the combined major and notify the LAST program director. Degree checks must also be cleared with the program director. Freshmen and sophomores considering this program are advised to begin their study of Spanish or Portuguese as early as possible.

**Requirements for a Major in Latin American and Latino Studies:**

**Language Competence:** The student must complete SPAN 2013 (or equivalent). Provisions are available for recognition of language skills gained by other means than formal course work taken at the University of Arkansas: See information under the entry in the department of foreign languages. Further functional work in Spanish or Portuguese as well as study and residence in a Latin American nation can serve to strengthen language competence and are encouraged.

**Colloquium:** The student must complete at least three hours in the interdepartmental colloquium, LAST 4003. The Colloquium may be repeated, with the adviser's approval, provided the topic is different.

**Electives:** The student must complete 18 hours, in addition to the LAST Colloquium, in courses with specific Latin American or Latino content, or individualized study options under instructors teaching Latin American or Latino studies. Students choosing to take individualized readings or directed research courses must obtain the approval of the director of the area studies program. In the selection of the electives, the following conditions apply:

1. Courses must be selected from at least three different departments,
2. A maximum of nine hours may be submitted from courses taken in any one department.

The following courses and individualized study options may be taken in fulfillment of elective requirements (for detailed descriptions please see the listings under the individual departmental headings):

**Anthropology**

- ANTH 3213 Indians of North America
- ANTH 3503 Power and Popular Protest in Latin America
- ANTH 3523 Gender and Politics in Latin America
- ANTH 4263 Identity and Culture in the U.S.-Mexico Borderlands
- ANTH 448V Individual Studies in Anthropology

**Economics**

- ECON 3843 Economic Development & Multilateral Finance

**Geography**

- GEOG 2003 World Regional Geography
- GEOG 410V Special Problems in Geography

**History**

- HIST 3203 Colonial Latin America
- HIST 3213 Modern Latin America
- HIST 3223 Violence and Conflict in Latin American History
- HIST 4783 History of Modern Mexico
- HIST 5313 Reading Seminar in Latin American History
- HIST 5323 Research Seminar in Latin American History

**Latin American Studies**

- LAST 2013 Intro. to Latin American Studies
- LAST 3013 Modern Latin American Lit in Translation
- LAST 4003 Latin American Studies Colloquium

**Political Science**

- PLSC 3573 Governments and Politics of Latin America
- PLSC 394V Readings in Political Science
- PLSC 4873 Inter-American Politics

**Social Work**

- SCWK 3193 Human Diversity and Social Work

**Spanish**

- SPAN 3103 Cultural Readings
- SPAN 3113 Intro. to Literature
- SPAN 4133 Survey of Spanish-American Literature I
- SPAN 4193 Survey of Spanish-American Literature II
- SPAN 4223 Latin American Civilization
- SPAN 4243 Literature and Culture in the Hispanic United States
- SPAN 4253 Latin American Cinema and Society
- SPAN 4553 Latin America Today
- SPAN 475V Special Investigations
- SPAN 4883 Indigenous Literatures of Mesoamerica, the Andes, and the Amazon
- SPAN 5253 Colonial Literature and Culture
- SPAN 5393 19th Century Spanish-American Literature
- SPAN 5403 Spanish American Theater
- SPAN 5463 20th Century Spanish-American Literature
- SPAN 5883 Indigenous Literatures

**Requirements for a Minor in Latin American and Latino Studies:** Students wishing to minor in Latin American and Latino studies must fulfill the Colloquium (LAST 4003) and the language requirements described below, and must complete at least 12 hours from among the electives listed below. Electives must include courses from at least two different academic departments. Included in the 12 hours may be 3 additional hours of LAST 4003, provided the topic is different.

**Requirements for Honors in Latin American and Latino Studies:** The Honors Program in Latin American and Latino studies gives junior and senior students of high ability the opportunity to enroll in enriched courses and conduct independent research culminating in an honors thesis. In addition to satisfying the general Fulbright College requirements for graduation and the basic eligibility requirements for honors as established by the Honors Council, candidates for honors in Latin American and Latino studies must complete 12 hours of honors credit in partial satisfaction of requirements for the co-major. One to six of these may be thesis hours (LAST 399VH). The preferred method for satisfying the remaining hours is to enroll in the colloquium at least once for honors credit (LAST 4003H) and to take relevant honors colloquia or graduate courses (with permission) in one of the departments contributing to this interdisciplinary area study. The thesis committee shall include a representative from the major discipline (in the case of multiple majors, from the discipline contributing most significantly to the topic). Successful completion of these requirements will be recognized by the award of the distinction “Latin American and Latino Studies Scholar *Cum Laude*” at graduation. Higher degree distinctions are recommended only in exceptional cases and are based upon the whole of the candidate’s program of honors studies.

SEE PAGE 364 FOR LATIN AMERICAN AND LATINO STUDIES (LAST) COURSES

**MATHEMATICAL SCIENCES (MASC)**

Chaim Goodman-Strauss  
 Chair of the Department  
 301 Science and Engineering  
 479-575-3351

- Distinguished Professor Schein
- Professors Akeroyd, Brewer, Campogna, Cochran, Feldman, Goodman-Strauss, Lanzani, Luecking, Madison, Ryan
- Professors Emeriti Duncan, Dunn, Kimura, Long, Scroggs, Summers
- Associate Professors Arnold, Johnson, Meaux, Meek, Petris, Rieck
- Associate Professors Emeriti Monroe, Sekiguchi
- Assistant Professors Dingman, Han, Song, Raich, Tjani
- Clinical Assistant Professor Woodland
- Visiting Assistant Professors Munasinghe
- Instructors Korth, Mills, Stephenson
- Instructor Emeriti Lieber, Mackey, Wickliff (M.)

**Requirements for a Major in Mathematics, B.A. Degree:** MATH 2103, MATH 2574, MATH 4932 and 18 semester hours of courses in mathematics numbered above 3000, including MATH 3083 or 3093, and MATH 3113.

**Writing Requirement for both B.A. and B.S. Degrees:** The writing requirement for mathematics majors will be satisfied by writing a paper based on the student’s research of a mathematical topic under the direction of a faculty member. Typically, one hour of credit in MATH 400V will be awarded for successfully completing the paper. An honors paper or senior thesis will satisfy this requirement. The student should consult his or her adviser for details.

**Mathematics B.A. Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
4	†MATH 2554 Calculus I
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
3	General Elective
<b>16</b>	<b>Total Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
4	†MATH 2564 Calculus II
3	†MATH 2103 Discrete Mathematics
3	Core from areas a, b, c, d, or e (as needed)
3	General Elective
<b>16</b>	<b>Total Hours</b>
Fall Semester Year 2	
4	†MATH 2574 Calculus III
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
4	General Electives
<b>14</b>	<b>Total Hours</b>
Spring Semester Year 2	
3	‡MATH 3083 Linear Algebra or MATH 3093 Abstract Linear Algebra
3	†Core from area g (if needed) or Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)



4	Core from area f (as needed)
3	General Elective
<b>16</b>	<b>Total Hours</b>
<b>Fall Semester Year 3</b>	
3	‡STAT 3013 Probability and Statistics
3	†Advanced Level Elective in Fulbright College
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Total Hours</b>
<b>Spring Semester Year 3</b>	
3	‡MATH 3113 Introduction to Abstract Algebra I
3	‡MATH/STAT Elective above 3000 Level
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Total Hours</b>
<b>Fall Semester Year 4</b>	
3	‡MATH 3773 Foundations of Geometry
3	‡MATH/STAT Elective above 3000 Level
1	‡MATH 400(1) Senior Writing Project
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
3	General Elective
<b>16</b>	<b>Total Hours</b>
<b>Spring Semester Year 4</b>	
2	‡MATH 4932 Math Major Seminar
3	‡MATH/STAT Elective above 3000 Level
3	Core from areas a, b, c, d, or e (as needed)
6	General Electives
14	Semester Hours
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Requirements for a Major in Mathematics, B.S. Degree:** As a part of the requirements for a B.S. degree with a major in mathematics, the student must complete MATH 2103, MATH 2574, MATH 3083 or 3093, MATH 3113, MATH 3404, MATH 4513, MATH 4932, and CSCE 2003/2001L. In addition, for the B.S. degree in mathematics, the student is required to complete one of the following three options:

1. A program for the student who wishes to prepare for either applied work in mathematics or graduate work in some field other than mathematics or statistics,
2. A program for the student who is seeking a broad background in mathematics or who wishes to study mathematics at the graduate level,
3. A program for the student who wishes to emphasize statistics or who intends to study statistics at the graduate level.

The courses required for option (1) are MATH 3423, either MATH 4353 and 4363, or STAT 3013 and 4003, plus three semester hours of electives from mathematics courses numbered above 3000. Strongly recommended electives in this program are MATH 4523 and MATH 4443.

The courses required for option (2) are MATH 4523, MATH 4443, MATH 4113 and three hours of electives from mathematics courses numbered above 3000.

The courses required for option (3) are MATH 3353, STAT 3013, STAT 4003, STAT 4001L, STAT 4033, STAT 4043. Strongly recommended electives in this program are STAT 5103 and STAT 5113.

All of the electives used in fulfilling the requirements for either of the

baccalaureate programs in mathematics must be approved by the student's adviser.

The science requirement for the Bachelor of Science degree in mathematics consists of two of the five course sequences as listed:

1. BIOL 1543/1541L and one of BIOL 2533, BIOL 1613/1611L, BIOL 1603/1601L or BIOL 2013/2011L
2. CENG 2013/2011L and CSCE 3143
3. CHEM 1103/1101L, CHEM 1123/1121L
4. GEOL 1113/1111L, GEOL 1133/1131L
5. PHYS 2054, PHYS 2074 (College Physics will not substitute)

In addition, one advanced course must be chosen from one of the two chosen areas. Courses taken to satisfy this requirement must be approved by the department of mathematical sciences.

A 2.00 cumulative grade-point average on all work completed in the department of mathematical sciences will be required for graduation with a B.A. or B.S. degree.

**Writing Requirement for both B.A. and B.S. Degrees:** The writing requirement for mathematics majors will be satisfied by writing a paper based on the student's research of a mathematical topic under the direction of a faculty member. Typically, one hour of credit in MATH 400V will be awarded for successfully completing the paper. An honors paper or senior thesis will satisfy this requirement. The student should consult his or her adviser for details.

**Mathematics B.S. Eight-Semester Degree Programs**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The B.S. degree in mathematics includes three options: Industrial, Graduate Study, and Statistics. The eight-semester plan for each is shown below.

The following eight-semester plan refers to additional B.S. Core Requirement Areas (areas a, b, c, d, e, and f) found on page 203 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

**Mathematics, B.S., Option 1 (Applied)**

<b>Fall Semester Year 1</b>	
3	ENGL 1013 Composition I
4	†MATH 2554 Calculus I
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
3	General Elective
<b>16</b>	<b>Total Hours</b>
<b>Spring Semester Year 1</b>	
3	ENGL 1023 Composition II
4	†MATH 2564 Calculus II
3	†MATH 2103 Discrete Mathematics
3	Core from areas a, b, c or e (as needed)
4	CSCE 2003/2001L Programming Foundations
<b>17</b>	<b>Total Hours</b>
<b>Fall Semester Year 2</b>	
4	†MATH 2574 Calculus III
3	‡MATH 3083 Linear Algebra or Elective* or ‡MATH 3093 Abstract Linear Algebra, or Elective
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
4	Science Sequence 1
<b>17</b>	<b>Total Hours</b>
<b>Spring Semester Year 2</b>	
4	‡MATH 3404 Differential Equations

3	†‡STAT 3013 Probability and Statistics or †‡MATH 4353 Numerical Linear Algebra
3	Core from area f or Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
4	Science Sequence 1 (continued)
<b>17</b>	<b>Total Hours</b>
<b>Fall Semester Year 3</b>	
3-4	†‡STAT 4003/4001L Statistical Methods and Lab or †‡MATH 4363 Numerical Analysis2 (as needed)
3	†‡MATH 3083 Linear Algebra* or †‡MATH 3093 Abstract Linear Algebra, or Elective
3	†‡MATH 3423 Advanced Applied Mathematics
3	Core from area f or Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
<b>15-16</b>	<b>Total Hours</b>
<b>Spring Semester Year 3</b>	
3	†‡ MATH 3113 Abstract Algebra
3	†‡MATH/STAT 3000-4000 Level Elective
4	Science Sequence 2
3	Core from areas a, b, c or e (as needed)
3	General Elective
<b>16</b>	<b>Total Hours</b>
<b>Fall Semester Year 4</b>	
3	†‡MATH 4513 Advanced Calculus
4	Science Sequence 2 (continued)
3	Core from areas a, b, c or e (as needed)
3	General Elective
1	†‡MATH 400(1) Senior Writing Project
<b>14</b>	<b>Total Hours</b>
<b>Spring Semester Year 4</b>	
2	†‡MATH 4932 Math Major Seminar
3	†‡MATH/STAT 3000-4000 Level Elective
4	†‡Science 3 (Advanced Course in Sequence 1 or 2 above)
6	General Electives
15	Semester Hours
<b>124</b>	<b>Total Hours</b>

- \* Students should only take one of MATH 3083 or MATH 3093, but not both.
- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Mathematics, B.S., Option 2 (Pure)**

<b>Fall Semester Year 1</b>	
3	ENGL 1013 Composition I
4	†MATH 2554 Calculus I
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
3	General Elective
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 1</b>	
3	ENGL 1023 Composition II
4	†MATH 2564 Calculus II
3	†MATH 2103 Discrete Mathematics
3	Core from areas a, b, c or e (as needed)
4	CSCE 2003/2001L Programming Foundations
<b>17</b>	<b>Semester Hours</b>
<b>Fall Semester Year 2</b>	
4	†MATH 2574 Calculus III
3	†‡MATH 3083 Linear Algebra or †‡MATH 3093 Abstract Linear Algebra (if needed) or Core from areas a, b, c or e (as needed)
4	Science Sequence 1
3	Core from areas a, b, c or e (as needed)

3	General Elective
<b>17</b>	<b>Semester Hours</b>
<b>Spring Semester Year 2</b>	
4	†‡MATH 3404 Differential Equations
3	†‡MATH 3113 Introduction to Abstract Algebra I
3	Core from area f (if needed) or Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
4	Science Sequence 1
<b>17</b>	<b>Semester Hours</b>
<b>Fall Semester Year 3</b>	
3	†‡ MATH 4513 Advanced Calculus I
3	†‡ MATH 3083 Linear Algebra or †‡MATH 3093 Abstract Linear Algebra (if needed) or Core from areas a, b, c or e (as needed)
4	Science Sequence 2
3	Core from area f (if needed) or Core from areas a, b, c or e (as needed)
3	General Elective
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
3	†‡ MATH 4523 Advanced Calculus II
3	†‡ MATH 4443 Complex Variable for Application
4	Science Sequence 2
3	Core from areas a, b, c or e (as needed)
3	General Elective
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	†‡ MATH 4113 Introduction to Abstract Algebra II
4	†Science 3 (Advanced Course in Sequence 1 or 2 above)
3	Core from areas a, b, c or e (as needed)
3	General Elective
1	†‡ MATH 400(1) Senior Writing Project
<b>14</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
2	†‡ MATH 4932 Math Major Seminar
3	†‡MATH/STAT 3000-4000 Level Elective
3	Core from areas a, b, c or e (as needed)
6	General Electives
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Mathematics, B.S., Option 3 (Statistics)**

<b>Fall Semester Year 1</b>	
3	ENGL 1013 Composition I
4	†MATH 2554 Calculus I
4	Science Sequence 1
3	Core from areas a, b, c or e (as needed)
<b>14</b>	<b>Semester Hours</b>
<b>Spring Semester Year 1</b>	
3	ENGL 1023 Composition II
4	†MATH 2564 Calculus II
3	†MATH 2103 Discrete Mathematics
3	Core from areas a, b, c or e (as needed)
4	CSCE 2003/2001L Programming Foundations
<b>17</b>	<b>Semester Hours</b>
<b>Fall Semester Year 2</b>	
4	†MATH 2574 Calculus III
3	†‡MATH 3083 Linear Algebra or †‡MATH 3093 Abstract Linear Algebra (if needed) or Core from areas a, b, c or e (as needed)
4	†‡STAT 4003/4001L Statistical Methods / Lab
4	Core from areas a, b, c or e (as needed)
<b>15</b>	<b>Semester Hours</b>

Spring Semester Year 2	
4	†‡MATH 3404 Differential Equations
3	†‡STAT 3013 Probability and Statistics
3	†Core from area f or Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
4	Science Sequence 1
17	<b>Semester Hours</b>
Fall Semester Year 3	
4	Science Sequence 2
3	†‡MATH 4513 Advanced Calculus I
3	†‡MATH 3083 Linear Algebra or or †‡MATH 3093 Abstract Linear Algebra (if needed), or General Elective
3	†‡STAT 4033 Nonparametric Stat Methods
3	†Core from area f or Core from areas a, b, c or e (as needed)
16	<b>Semester Hours</b>
Spring Semester Year 3	
4	Science Sequence 2
3	†‡MATH 3353 Numerical Methods
3	†‡MATH 3113 Introduction to Abstract Algebra I
3	Core from areas a, b, c or e (as needed)
3	General Elective
16	<b>Semester Hours</b>
Fall Semester Year 4	
3	†‡STAT 4043 Sampling Techniques
3	Core from areas a, b, c or e (as needed)
4	Science 3 (Advanced Course in Sequence 1 or 2 above)
3	General Elective
1	†‡MATH 400(1) Senior Writing Project
14	<b>Semester Hours</b>
Spring Semester Year 4	
2	†‡MATH 4932 Math Major Seminar
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
7	General Electives (as needed to meet 124 hour requirement)
15	<b>Semester Hours</b>
124	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Requirements for Departmental Honors in Mathematics:** The Departmental Honors Program in Mathematics is designed for the superior student and is intended to help the student develop a more comprehensive view of the nature of mathematics. The program provides a vehicle for the recognition of the achievements of work beyond the usual course of study and earns the student the distinction “Mathematics Scholar *Cum Laude*” at graduation. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate’s program of honors studies.

**Graduation with honors:** The candidate must satisfy the requirements set forth by the Honors Council. The candidate must also obtain at least a 3.50 grade-point average in mathematics courses numbered MATH 2554, MATH 2564, MATH 2574, MATH 3083, MATH 3113, MATH 3404, and MATH 4513, as well as in the additional mathematics courses necessary to complete the requirements for the chosen option. In addition, a grade of “D” or “F” in any other course offered by the department disqualifies a student for honors.

Candidates must take one year of honors mathematics in their senior year. This course will require an acceptable paper and will carry two hours of credit per semester. The quality of this paper, along with the execution of the rest of the student’s honors program including the overall academic performance, will be used in determining the distinction between Honors and High Honors.

**Requirements for a Minor in Mathematics:** MATH 2103, 2564, and 9

hours (3 courses) selected from MATH 2574, MATH 3083 or 3093, MATH 3103, MATH 3113, MATH 3404, and MATH 4513.

**Requirements for a Minor in Statistics:** MATH 2554 and 12 hours of non-cross-listed courses in the statistics section of this catalog, including 9 hours in courses numbered 3000 and above. A student must notify the department of his or her intent to minor.

**Mathematics (B.A. or B.S.) Teacher Licensure Requirements:**

Please refer to the Secondary Education Requirements for Fulbright College Students on page 118.

Students wanting to teach mathematics in middle school should consult with a middle level adviser in the College of Education and Health Professions.

**Advising Note:** Students in Fulbright College of Arts and Sciences who, in the opinion of the department of mathematical sciences, need additional work in the fundamentals are required to take MATH 0003. Using the student’s record and their ACT or Mathematics Placement Test scores, a student’s adviser will suggest enrollment in appropriate courses (a mathematics ACT score below 19 indicates placement in MATH 0003.

SEE PAGE 367 FOR MATHEMATICS (MATH) COURSES

**Statistics (STAT)**

- Laurie Meaux  
Chair of Studies  
301 Science and Engineering  
479-575-3351
- Associate Professors Meaux, Petris
- Assistant Professor Song

**Requirements for a Minor in Statistics:** MATH 2554 and 12 hours of non-cross-listed courses, including 9 hours in courses numbered 3000 and above. A student must notify the department of mathematical sciences of his or her intent to minor.

SEE PAGE 388 FOR STATISTICS (STAT) COURSES

**MEDICAL SCIENCES AND DENTISTRY**

See page 126, under Combined Academic and Medical or Dental Degree and also the discussion of the pre-medical programs and the pre-dental program under the section on Health Related Professions.

**MEDIEVAL AND RENAISSANCE STUDIES (MRST)**

- William Quinn  
Chair of Studies  
333 Kimpel Hall  
479-575-4301  
<http://www.uark.edu/depts/h2p/mrst>
- Professors Candido, Duval, Goodstein-Murphree, Levine, Markham, Quinn, Spellman, Stephens, Wolpert
- Associate Professors Adler, Coon, Fredrick, Jacobs, Kahf, Senior, Sexton
- Assistant Professor Brock

The Medieval and Renaissance studies minor is administered by the Humanities program. This minor encourages undergraduate students to pursue an interdisciplinary study of all aspects of the Middle Ages and Renaissance as a complement to their major field of study.

**Requirements for a Minor in Medieval and Renaissance Studies (MRST):** (15 credit hours) Students must take HIST 1113H or HIST 1113,

Honors World Civilization I or non-honors section, or HUMN 1124H (the Medieval segment of the Honors Humanities Project) and complete at least 12 additional credit hours selected from the courses listed below or approved by the Chair of Studies. A maximum of 6 hours may be presented from courses taken in the student's designated major.

Required Core Course (3 hours)

HUMN 1124H Honors Equilibrium of Cultures, 500-1600 CE  
or HIST 1113H Honors World Civilization I (may also be taken as non-honors, HIST 1113 World Civilization I)

12 hours of electives to be chosen from the following (a maximum of six hours may be presented from courses taken in the student's major department):

ARHS 4843 Medieval Art  
ARHS 4853 Italian Renaissance Art  
ARHS 4863 Northern Renaissance Art  
ARCH 2233 History of Architecture I  
ARCH 4023 Advanced Architectural Studies  
DRAM 4773 Acting Shakespeare  
ENGL 3433 Introduction to Chaucer  
ENGL 4303 Introduction to Shakespeare  
LATN 5633 Medieval Latin  
SPAN 5203 Medieval Spanish Literature  
HIST 3033 Islamic Civilization  
HIST 4043 Late Antiquity and the Early Middle Ages  
HIST 4053 Late Middle Ages  
HIST 4073 Renaissance and Reformation, 1300-1600  
HIST 4163 Tudor-Stuart England  
HIST 4313 China to 1644  
HIST 4353 Middle East, 600-1500  
HIST 4373 Mongol and Mamluk Middle East, 1250-1520  
HIST 4393 Ottoman Empire and Iran (1300-1722)  
HUMN 3923H Honors Colloquium (when offered as a MRST course)  
HUMN 425V Special Topics Colloquium  
(when offered as a MRST course)  
MUHS 3703 History of Music to 1800  
PHIL 4013 Platonism and the Origin of Christian Theology  
PHIL 4023 Medieval Philosophy  
PLSC 3953 Ancient and Medieval Political Thought

## MIDDLE EAST STUDIES (MEST)

Thomas R. Paradise  
Interim Director, King Fahd Center for Middle East and Islamic  
Studies  
202 Old Main  
479-575-4157  
<http://www.uark.edu/depts/mesp/index.html>  
[mest@uark.edu](mailto:mest@uark.edu)

- Professors Adams (English), Farah (curriculum and instruction), Haydar (foreign languages), Paradise (geosciences-geography), Rose (anthropology), Swedenburg (anthropology)
- Associate Professors Adler (philosophy, biblical Hebrew), Coon (history), D'Alisera (anthropology), Ghadbian (political science), Gordon (history), Kahf (comparative literature), Reid (political science), Wolpert (music)
- Assistant Professor Casana (anthropology)

Students interested in the Middle East and North Africa and wishing

to maximize their potential for academic, business, professional, or government careers related to the area, may earn a major in Middle East studies with a required second major in an approved area such as anthropology, economics, foreign languages, geography, history, journalism, and political science. New students entering the program are required to notify both the major adviser and the MEST director of their intention to participate. Freshmen and sophomores considering this program are advised to begin their study of a Middle East language as early as possible. Students may also earn a minor in Middle East studies.

**Requirements for a Major in MEST:** To attain a major in MEST, the student is required to have a second major in one of the following approved areas: anthropology, communication, economics (BA), French, geography, history, international relations, journalism, political science, sociology, or Spanish. Up to nine hours of courses in the second major with Middle East content may be counted toward the MEST major with the permission of the MEST director.

**Total Hours Required:** (30 semester hours) Students must complete 3 hours in Gateways to the Middle East (MEST 2013), 3 hours in the MEST Colloquium (MEST 4003), 6 hours of Arabic language beyond the Fulbright College language proficiency requirement (ARAB 2013), and 18 hours in additional MEST or MEST-approved core courses. MEST courses must be in at least two disciplines, with no fewer than 9 hours of MEST core courses in each discipline.

**Gateways to the Middle East:** (3 hours) Students must complete 3 hours of Gateways to the Middle East (MEST 2013).

**Middle East Studies Colloquium:** (3 hours) Students must complete at least 3 hours in the Middle East Studies Colloquium (MEST 4003). The Colloquium may be repeated with a change of subject for a maximum of 6 credits.

**Arabic Requirement:** (6 hours of MEST credit) Students must complete 6 hours of Arabic language beyond the Fulbright College language proficiency requirement (ARAB 2013). Courses approved by the MEST director and completed in a summer intensive Arabic program or study-abroad program in an Arabic speaking country may substitute for all or part of this requirement.

**MEST Core Courses:** To count for MEST credit, courses not on the following list must be approved by the student's MEST major adviser and the MEST director. Individualized readings, directed research courses, or courses in a second Middle Eastern language such as biblical Hebrew or Aramaic may count as MEST core courses with the approval of the MEST major adviser and MEST director.

### MEST Core Courses:

ANTH 3123 Anthropology of Religion  
ANTH 3033 Egyptology  
ANTH 4123 Ancient Middle East  
ANTH 4256 Archeological Field Session  
ANTH 4513 African Religions  
ANTH 4533 Middle East Cultures  
ANTH 4913 Topics in the Middle East  
GEOG 2003 World Regional Geography  
GEOG 4033 Geography of the Middle East  
GEOG 410V Special Problems in Geography: Middle East/North Africa  
HIST 3033 Islamic Civilization  
HIST 3043 History of the Modern Middle East  
HIST 3473 Palestine and Israel in Modern Times  
HIST 3923H Honors Colloquium (approved selected topics)  
HIST 4353 Middle East 600-1250  
HIST 4373 Mongol and Mamluk 1250-1520  
HIST 4393 The Ottoman Empire and Iran 1300-1722

HIST 4413 New Women in the Middle East  
 HIST 4433 Social and Cultural History of the Modern Middle East  
 HUMN 2213 Introduction to World Religions  
 HUMN 425V Colloquium (approved selected topics)  
 MEST 2003 Islam: History and Practice  
 MEST 2013 Gateways to the Middle East  
 MEST 4003 Middle East Studies Colloquium  
 MEST 4003H Honors Middle East Studies Colloquium  
 PLSC 3523 Politics of the Middle East  
 PLSC 3813 International Law  
 PLSC 4593 Islam and Politics  
 PLSC 4843 The Middle East in World Affairs  
 WLIT 3983/603V Special Studies: (approved selected topics)

**Requirements for a Minor in Middle East Studies:**

Total Hours Required: (18 semester hours)

Students must complete MEST 2013 Gateways to the Middle East (3 hours), MEST 4003 MEST Colloquium, 6 hours of Arabic beyond the Fulbright College language proficiency requirement (ARAB 2013), and a minimum of 6 additional hours of MEST core courses.

Gateways to the Middle East: (3 hrs) Students must complete three hours in the MEST 2013 Gateways to the Middle East.

Middle East Studies Colloquium: (3 hours) Students must complete three hours in the Middle East Studies Colloquium (MEST 4003)

Arabic Requirement: (6 hours of MEST credit) Students must complete 6 hours of Arabic language beyond the Fulbright College language proficiency requirement (ARAB 2013). Courses approved by the MEST director and completed in a summer intensive Arabic program or study-abroad program in an Arabic speaking country may substitute for all or part of this requirement.

MEST Core Courses: (6 hours) Students must complete an additional 6 hours of MEST core courses supervised by faculty participating in the program. Students choosing to take individualized reading or directed research courses as a part of the minor must obtain the approval of the MEST director and their major adviser.

**Requirements for Honors in MEST:** The Honors Program in Middle East Studies gives junior and senior students of high ability the opportunity to enroll in enriched courses and conduct independent research culminating in an honors thesis. In addition to satisfying the general Fulbright College requirements for graduation and the basic eligibility requirements for honors as established by the Honors Council, candidates for honors in Middle East Studies must complete 12 hours of honors credit in partial satisfaction of requirements for the co-major. One to 6 of these hours may be thesis hours (MEST 399VH).

The preferred method for satisfying the remaining hours is to enroll in the colloquium at least once for honors credit (MEST 4003H) and to take relevant honors colloquia or graduate courses (with permission) in one of the departments contributing to this interdisciplinary area study. The thesis committee shall include a representative from the major discipline (in the case of multiple majors, from the discipline contributing most significantly to the topic). Successful completion of these requirements will be recognized by the award of the distinction “Middle East Studies Scholar *Cum Laude*” at graduation. Higher degree distinctions are recommended only in exceptional cases and are based upon the whole of the candidate’s program of honors studies.

**MUSIC (MUSC)**

Ronda Mains  
 Chair of the Department  
 201 Music Building  
 479-575-4701  
<http://music.uark.edu>  
[music@uark.edu](mailto:music@uark.edu)

- Professors Cencel, Gates, Greeson, Mains, Mueller, Ragsdale, Ramey, Sloan, Thompson, Warren
- Professors Emeriti Ballenger, Bright, Brothers, Detels, Groh, Jackson, Janzen, Umiker, Widder, Worthley
- Associate Professors Jones, Margulis (E.), Margulis (J.), Misenhelter, Yoes
- Associate Professors Emeriti Colber, Johnson
- Assistant Professors Cholhitchanta, Hickson, Kahng, Pierce, Rulli
- Visiting Assistant Professors Delaplain, Gunter, Lacy, Morris, Pratchard

The music department strives to enrich and inspire the human mind and spirit through the pursuit of excellence in creative activity, research, teaching, and service. The Department of Music is an accredited institutional member of the National Association of Schools of Music. The requirements for entrance and for graduation as set forth in this catalog are in accordance with the published regulations of that Association.

**Degrees in Music**

Two baccalaureate degrees in music are available: the Bachelor of Music (see page 128 for general education requirements, see below for more detailed specific requirements), and the Bachelor of Arts with a Major in Music (see page 126 for general education requirements, see below for more detailed specific requirements). To achieve junior standing in the curriculum leading to the Bachelor of Arts degree with a major in music and the Bachelor of Music degree, the student must have completed 56 hours and must have maintained a cumulative grade average of “C” in all music courses, with the exception of ensemble, by the end of the fourth semester. The student must also have earned a grade average of not less than “B” in the major applied field of study during the sophomore year. This standing is prerequisite to all 3000-level courses and above in music.

All music majors are required to enroll in an ensemble in each semester of residence appropriate to their major area and with consent of their adviser.

All music majors, with exceptions noted below, are required to enroll in MUEN 3411 Concert Choir during the first year of residence. Exceptions to the requirement would include all students pursuing the Bachelor of Music (B.M.) degree for whom voice or piano is the major applied area.

**Piano Proficiency Requirement:** Students pursuing a Bachelor of Music degree must pass a piano proficiency examination upon entering the University of Arkansas or must register in piano class until this requirement is met.

On the basis of prior study in music, a student may be advised to omit one or more of the semesters of Aural Perception (MUTH 1621, MUTH 1631, MUTH 2621, MUTH 2631). Students will receive college credit for the omitted aural perception courses when they have validated their higher placement by passing the course in which they are placed with a grade of “B” or better.

**Writing Requirement:** Students can meet the Fulbright College writing requirement by submission of a satisfactory term paper for MUHS 4253, MUED 4273, MUED 4283, or MUED 4293.

**Requirements for a Major in Music leading to a Bachelor of Music Degree:** MUTH 1603, MUTH 1621, MUTH 1631, MUTH 2603,

MUTH 2621, MUTH 2631, MUTH 3603 (except for music education majors), MUTH 3613, MUTH 4703 (except for music education majors), MUHS 3703, MUHS 3713, MUHS 4253 (except for music education majors), MUPD 3801, MUAC 2111, MUAC 2121 plus the following specific requirements by major area of emphasis. All students must complete four semesters of MUAP 110V with a grade of "A" or "B" before enrolling in MUAP 310V.

**Piano Performance Major:** Applied Piano 28 hours, of which 16 must be at the upper level (including MUAP 3201, 4201); Secondary MUAP or MUAC (2); MUHS 4803, MUHS 4813; MUTH 4322; MUPD 3811 or MUPD 3861; MUPD 4863; MUEN 3411 (2), MUEN 3451 (6), electives (may be non-music): 4.

**Voice Performance Major:** Applied Voice 24 hours, of which 12 must be at the upper level (including MUAP 3201, MUAP 4201); Secondary MUAP or MUAC (4); MUAC 1121, MUAC 1141, MUAC 1151, MUPD 3861, MUHS 4763, MUHS 4773; Ensemble: 8 hours (see adviser for ensemble selection); electives (may be non-music): 4.

(NOTE: 9 hours additional foreign language is also required, foreign language study must include French, German, and Italian.)

**String Performance Major:** Applied 28 hours, of which 16 must be at the upper level (including MUAP 3201, MUAP 4201); Secondary MUAP or MUAC (4); MUHS 4703, MUEN 3431 (8), MUEN 3501 (4); electives (may be non-music): 10.

**Woodwind, Brass, or Percussion Performance Major:** Applied 24 hours, of which 12 must be at the upper level (including MUAP 3201, MUAP 4201); Secondary MUAP or MUAC (4); MUTH 4612, MUHS 4733. Large Ensembles (8); Small Ensembles (4); electives (may be non-music): 11.

**Guitar Performance Major:** Applied 28 hours, of which 16 must be at the upper level (including MUAP 3201, MUAP 4201); Secondary MUAP or MUAC (4); MUHS 4703, MUTH 4612; Ensemble: 8 hours (see adviser for ensemble selections); electives (may be non-music): 11.

**Theory or Composition Major:** MUAP 110V/310V (major-level applied 16 hours), MUAC 1221, MUAC 1231, MUAC 2221, MUAC 2231 (unless waived), MUPD 3811 or MUPD 3861, MUTH 4612, Ensemble: 8 hours (see adviser for ensemble selections). Students majoring in Theory or Composition must receive a grade of "B" or higher in MUTH 2603, MUTH 3603, and MUTH 3613. Composition: MUTH 164V, MUTH 364V (14), MUAP 4201; electives (may be non-music): Theory: MUTH 164V, MUTH 364V (6), MUTH 498V (3); electives (may be non-music): demonstration of piano skills appropriate for a composer or theorist.

**Music Education:** (all emphases; in addition to requirements for the Bachelor of Music degree listed above) MUTH 4612; 14 MUAP/MUAC (applied, including recital – see below); MUAC 1221, MUAC 1231, MUAC 2221, MUAC 2231 (except for piano majors – see below); 8 MUEN (see below); MUED 2012, MUED 3021, MUED 3833 and MUED 4112; plus the following specific requirements by emphasis.

Students who wish to apply for admission to the internship program in music education must complete the following stages.

#### **Stage I: Complete an Evaluation for Internship**

Students must meet the following criteria to be cleared for the internship:

1. Declare the major in music education in the Fulbright Advising Center, 518 Old Main.
2. Successful completion of the PRAXIS I test by meeting or exceeding the Arkansas Department of Education cut-off scores. This test should be taken after the student has completed 30 credit hours and upon completion of ENGL 1013, ENGL 1023, and MATH 1203.
3. Obtain a "C" or better in the following pre-education core courses: CIED 3023, CIED 3033.
4. Obtain a "C" or better in MUED 2012, MUED 3021, and MUED 3833.

5. Satisfactory completion of the Evaluation for Internship form. The evaluation form must be completed by October 1 prior to doing a fall internship or March 1 prior to doing a spring internship. The completed form must be returned to the Coordinator of Teacher Education, 8 Peabody Hall, no later than the stated deadline.
6. Complete the B.M. degree with a cumulative GPA of 2.50 or higher. The degree must be posted to your University of Arkansas transcript at the Registrar's Office prior to internship.
7. Obtain departmental clearance for internship based on successful completion of portfolios, evaluation for internship, GPA requirements, course work requirements, selected written recommendations, an interview, and/or other requirements specified by your program.

All requirements in Stage I must be met to be cleared for the internship. Please contact the Coordinator of Teacher Education, 8 Peabody Hall, College of Education and Health Professions for more information.

#### **Stage II: Internship**

1. Complete the one-semester internship at an approved site in Washington or Benton counties.
2. Complete PRAXIS II requirements. See your adviser for completion dates.

NOTE: Students should always consult the Coordinator of Teacher Education for any licensure requirement changes. Students will not be licensed to teach in Arkansas until they have met all requirements for licensure as set forth by the Arkansas Department of Education.

Usually licensure in another state is facilitated by qualifying for a license in Arkansas. An application in another state must be made on the application form of that state, which can be obtained by request from the State Teacher Licensure office in the capital city. An official transcript should accompany the application. In many instances the applications are referred to the Coordinator of Teacher Education to verify program completion in teacher education.

**Music Education, Wind/Percussion:** 14 MUAP to consist of 8 MUAP 110V; 5 MUAP 310V, MUAP 3201; 8 MUEN to consist of 2 MUEN 3441; 6 selected from MUEN 3431, MUEN 3441, MUEN 3461, MUEN 3481, MUEN 3511; 9 additional MUAC to consist of MUAC 1331, MUAC 1341, MUAC 1351, MUAC 1361, MUAC 1371, MUAC 2141, and either MUAC 1301 or MUAC 1311, MUPD 3811, MUED 4293; electives (may include MUTH 1003 and any MUEN): 8.

**Music Education, Strings:** 14 MUAP to consist of 8 MUAP 110V; 5 MUAP 310V, MUAP 3201; 8 MUEN 3431; 8 additional MUAC to consist of 2 chosen from MUAC 1331, MUAC 1341, MUAC 2141, MUAC 1301, MUAC 1311, MUAC 1351, MUAC 1361, MUAC 1371, MUPD 3811, MUED 4273; electives (may include MUTH 1003 and any MUEN): 8.

**Music Education, Choral/Voice:** 11 MUAP to consist of 5 MUAP 110V, 5 MUAP 310V, MUAP 3201, MUAC 1121, MUAC 1141, MUAC 1151, 8 MUEN selected from MUEN 3411, MUEN 3451, 3 MUAC to include MUAC 1371, 1 of MUAC 1301 or MUAC 1311, 1 of MUAC 1331, MUAC 1341, MUAC 1351, MUAC 1361, or MUAC 2141, 2 MUAP 1001 Piano, 1 MUAP/MUAC by advisement, MUPD 3861, MUED 4283, electives (may include MUTH 1003 and any MUEN): 8.

**Music Education, Choral/Piano:** 14 MUAP to consist of 8 MUAP 110V, 5 MUAP 310V, MUAP 3201, MUAC 1121, MUAC 1141, MUAC 1151, 8 MUEN selected from MUEN 3411, MUEN 3451, 3 MUAC to include MUAC 1371, 1 of MUAC 1301 or MUAC 1311, 1 of MUAC 1331, MUAC 1341, MUAC 1351, MUAC 1361, or MUAC 2141, 4 MUAP 1001/3001 Voice, MUPD 3861, MUED 4283, electives (may include MUTH 1003 and any MUEN): 8.

**Requirements for a Major in Music leading to a Bachelor of Music Degree with Elective Studies in Business:** MUTH 1603, MUTH 1621, MUTH 1631, MUTH 2603, MUTH 2621, MUTH 2631, MUTH 3613; MUHS 3703, MUHS 3713, MUHS 4253; MUPD 3801; MUAC 2111,

MUAC 2121, MUAC 1221, MUAC 1231, MUAC 2221, MUAC 2231; 14 MUAP to consist of 8 MUAP 110V, 5 MUAP 310V, MUAP 3201; 7 MUEN to be selected with the consent of the student's adviser; plus the student must declare one concentration for a Business Administration Minor for Non-Business Students and fulfill all requirements for that declared minor.

**Requirements for a Major in Music leading to a Bachelor of Arts Degree:** This program is for undergraduates who wish to major in music as part of a liberal arts program. A minimum of 42 semester hours in music to include: MUTH 1603, MUTH 1621, MUTH 1631, MUTH 2603, MUTH 2621, MUTH 2631, MUTH 3603, MUTH 3613, MUHS 3703, MUHS 3713, MUHS 4253, MUAC 1221, MUAC 1231, 8 hours (normally one or two hours per semester) of applied study on voice or on one instrument and 4 hours (4 semesters) of ensemble to be selected with the consent of their advisers.

A Bachelor of Arts degree with a combination of music-drama major may be obtained. See the chairman of the music department for the specific courses required for the degree.

**Requirements for Departmental Honors in Music:** The Departmental Honors Program in Music provides upper-division undergraduate students an opportunity to participate formally in scholarly, creative, or performance music activities. Honors candidates carry out independent study, research and performance under the guidance of the music faculty and participate in special honors classes and seminars. They must take 12 hours (which may include 6 hours of thesis) in Honors Studies.

Each honors student will be required to select an honors committee. The committee will comprise the honors thesis adviser (a Music Department faculty member and major teacher in the area of the honors project), a second faculty member from the Music Department chosen by the student, a member from outside the music department chosen by the student, and a member of the Honors Council appointed by the Honors College. This committee is responsible for hearing and seeing the work of the student in the area of the honors project and will administer the oral examination to the candidate at the end of the last semester of the student's work. The committee then recommends to the Honors Council whether or not the student receives honors in music. Outstanding student achievement will be recognized by awarding the distinction "Music Scholar *Cum Laude*" at graduation. The award of higher degree distinctions is recommended only in truly exceptional cases and is based upon the whole of the candidate's program of honors studies.

The student may elect to do the honors project in one of six areas: performance, music history and literature, theory, composition, music education, or ethnomusicology. Honors work may be done in an area other than the student's major area that is, a student majoring in voice performance may elect to do honors work in music history, theory, or composition, etc.

If a student wishes to devise his or her own honors project in consultation with a supervising professor and with the permission of the department chair, he or she may be granted honors. If a student wishes to combine work in more than one field and if the committee approves, he or she may be granted honors in more than one area, although the designation on the diploma will read "in music."

**The requirements for work in each area are as follows:**

1. Performance
  - a. 2 semesters of MUAP 310VH, with concurrent registration in MUAP 3201H and MUAP 4201H
  - b. Other music department honors courses are recommended, see honors adviser. (A program file representing the student's range of performance activities during the junior and senior years will be maintained for the department file and for the Honors Council. Compact discs of the junior and senior recitals will be filed with the Honors Office.)
2. History and Literature

- a. Junior year: MUHS 5973 Seminar in Bibliography and Methods of Research
- b. Senior year: MUSC 490VH Honors Essay
3. Theory
  - a. Junior year: MUHS 5973 Seminar in Bibliography and Methods of Research
  - b. Senior year: MUSC 490VH Honors Essay
4. Composition
  - a. At least six hours of MUTH 364VH Honors Composition II
  - b. A full program of original compositions or equivalent.
5. Music Education
  - a. Junior year: MUED 5513 Seminar: Resources in Music Education
  - b. Senior year: MUSC 490VH Honors Essay
6. Ethnomusicology
  - a. Junior year: MUHS 5973 Seminar in Bibliography and Methods of Research
  - b. Senior year: MUSC 490VH Honors Essay

**Sample Music B.A. Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program, and should consult their music adviser for an eight-semester plan that is specific to their vocal, instrumental or theoretical emphasis area in music. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-4	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
3	MUTH 1003 Basic Musicianship (if required) or Core from areas a, b, c, d or e (as needed)
1	MUAC 1221 Piano for Music Majors I (fall only)
2	MUAP 110V Applied Voice/Instrument (usually 2 hours)
1	‡‡MUEN Music Ensemble (see adviser)
3	MLIT 1003 Music Lecture (for music majors) or HIST 1003 or HIST 1013
<b>16-17</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3	†MATH 2043, 2053, 2183 or Core from areas a, b, c, d or e (as needed)
3	MUTH 1603 Music Theory I (spring only)
1	MUTH 1621 Aural Perception I
1	MUAC 1231 Piano for Music Majors II (spring only)
2	MUAP 110V Applied Voice/Instrument (usually 2 hours)
1	‡‡MUEN 3411 Concert Choir (required for freshmen)
3	MLIT 1003 Music Lecture (for music majors) or HIST 1003 or HIST 1013 (as needed)
<b>17</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	‡MUTH 2603 Music Theory II
1	MUTH 1631 Aural Perception II
2	MUAP 110V Applied Voice/Instrument (usually 2 hours)
1	‡‡MUEN Music Ensemble (see adviser)
3	MLIT 1003 Music Lecture (for music majors) or HIST 1003 or HIST 1013 (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16</b>	<b>Semester Hours</b>

Spring Semester Year 2	
3	†Core from area g (if needed) or †Advanced Level Elective
3	‡MUTH 3603 Music Theory III
1	†MUTH 2621 Aural Perception III
2	MUAP 110V Applied Voice/Instrument (usually 2 hours)
1	‡MUEN Music Ensemble (see adviser)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 3	
3	‡MUTH 3613 Music Theory IV
1	†MUTH 2631 Aural Perception IV
3	‡MUHS 3703 History of Music to 1800
3	†Core from area g (if needed) or †Advanced Level Elective
4	Core from area f (as needed)
<b>14</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	‡MUHS 3713 History of Music from 1800
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	‡MUHS 4253 Special Topics in Music History
3	†Upper-Level Elective from Fulbright College
4	Core from area f (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	†Upper-Level Elective from Fulbright College
3	†Upper-Level Elective from Fulbright College (if needed) or General Elective
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Sample Music B.M. Eight-Semester Degree Program for Music Education**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program, and should consult their music adviser for an eight-semester plan that is specific to their vocal, instrumental or theoretical emphasis area in music. The following eight-semester plan refers to additional B.M. Core Requirement Areas (areas a, b, c, d, e, and f) found on page 202 at the end of this chapter.

Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

For this sample, the Music Activity Course Group requires seven 1-hour classes: MUAC 1331, 1341, 1351, 1361, 1371, 2141, and either 1301 or 1311.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	MUTH 1003 Basic Musicianship (if required) or Core from areas a, b, or c (as needed)

1	MUAC 1221 Piano for Music Majors I (fall only)
2	MUAP 1102 Applied Voice/Instrument
1	‡MUEN 3411 Concert Choir
1	‡MUEN 3441 Marching Band
3	MLIT 1003 Music Lecture (for music majors) or HIST 1003 or HIST 1013
1	One course from Music Activity Group (see below)
<b>15</b>	<b>Total Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3	MUTH 1603 Music Theory I (spring only)
1	MUTH 1621 Aural Perception I
1	MUAC 1231 Piano for Music Majors II (spring only)
2	MUAP 1102 Applied Voice/Instrument
1	‡MUEN Music Ensemble (see adviser)
3	MLIT 1003 Music Lecture (for music majors) or HIST 1003 or HIST 1013 (as needed)
1	One course from Music Activity Group (see below)
<b>15</b>	<b>Total Hours</b>
Fall Semester Year 2	
3	‡MUTH 2603 Music Theory II (MUTH 1603)
1	MUTH 1631 Aural Perception II
1	†MUAC 2221 Piano for Music Majors III (fall only)
2	†MUAC 2111/2121 Music Technology I/II
2	MUAP 1102 Applied Voice/Instrument
1	‡MUEN 3441 Marching Band
3	MLIT 1003 Music Lecture (for music majors) or HIST 1003 or HIST 1013 (as needed)
1	One course from Music Activity Group (see below)
2	MUED 2012 Introduction to Music Education
<b>16</b>	<b>Total Hours</b>
Spring Semester Year 2	
0-3	†Core from area f (if needed)
3	COMM 1313 Fundamentals of Communication
1	†MUTH 2621 Aural Perception III
1	†MUAC 2231 Piano for Music Majors IV (spring only)
2	MUAP 1102 Applied Voice/Instrument
1	‡MUEN Music Ensemble (see adviser)
1	One course from Music Activity Group (see below)
3	MATH 1203 College Algebra (If required, or higher-level math)
3	PSYC 2003 General Psychology
<b>15-18</b>	<b>Total Hours</b>
Fall Semester Year 3	
3	‡MUTH 3613 Music Theory IV (MUTH 1603, MUTH 2603)
1	†MUTH 2631 Aural Perception IV
2	‡MUHS 3703 History of Music to 1800 (MLIT 1003, HIST 1003 and HIST 1013)
2	‡MUAP 3102 Applied Voice/Instrument
1	‡MUEN Music Ensemble (see adviser)
1	‡MUPD 3801 Conducting I
3	†CIED 3023 (PSYC 2003) or CIED 3033 or MUED 3833
1	One course from Music Activity Group (see below)
<b>15</b>	<b>Total Hours</b>
Spring Semester Year 3	
2	‡MUTH 4612 Orchestration
3	‡MUHS 3713 History of Music 1800-present (MUHS 3703)
2	‡MUAP 3102 Applied Voice/Instrument
1	‡MUEN Music Ensemble (see adviser)
1	‡MUPD 3811 Conducting II: Instrumental Music
1	‡MUED 3021 Supervised Practicum in Teaching Musical Skills
1	One course from Music Activity Group (see below)
3	†CIED 3023 (PSYC 2003) or CIED 3033 or MUED 3833 (as needed)
3	Core from areas a, b, or c (as needed)
<b>17</b>	<b>Total Hours</b>
Fall Semester Year 4	
1	‡MUAP 3101/ MUAP 3201 Applied Voice/Instrument/Recital I (or in Spring Semester 4)
2	‡MUED 4112 Pedagogy in Music Education
3	‡MUED 4293 Instrumental Methods



1	†‡MUEN Music Ensemble (see adviser)
4	Core from area e
3	Core from areas a, b, or c (as needed)
1	One course from Music Activity Group (see below)
<b>16</b>	<b>Total Hours</b>
<b>Spring Semester Year 4</b>	
2	†‡MUAP 3102 Applied Voice/Instrument
1	†‡MUEN Music Ensemble (see adviser)
3	†CIED 3023 (PSYC 2003) or CIED 3033 or MUED 3833 (as needed)
4	Core from area e
3	Core from areas a, b, or c (as needed)
3	Core from areas a, b, or c (as needed)
16	Semester Hours
<b>124</b>	<b>Total Hours</b>

Note: Licensure for teaching in the state of Arkansas requires one additional semester of internship beyond and after the completion of degree requirements. The courses required during the semester of internship are MUED 4301 Seminar for Professional Entry into Music Education, MUED 451V (4 or 8 hours) Student Teaching: Elementary Music, and MUED 452V (4 or 8 hours) Student Teaching: Secondary Music.

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Sample Music B.M. Eight-Semester Degree Program for Music Performance**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program, and should consult their music adviser for an eight-semester plan that is specific to their vocal, instrumental or theoretical emphasis area in music. The following eight-semester plan refers to additional B.M. Core Requirement Areas (areas a, b, c, d, e, and f) found on page 202 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Students in the Voice Performance major are required to take 9 hours of foreign language in addition to the Fulbright College core requirement, so that at least 3 hours each of French, German, and Italian are taken.

<b>Fall Semester Year 1</b>	
3	ENGL 1013 Composition I
3	MUTH 1003 Basic Musicianship (if required) or Core from areas a, b, c, or d (as needed)*
1	MUAC 1221 Piano for Music Majors I (fall only)
3	MUAP 1103 Applied Voice/Instrument
1	MUAC 1121 Italian for Singers
1	†‡MUEN Music Ensemble (see adviser)
3	MLIT 1003 Music Lecture (for music majors) or HIST 1003 or HIST 1013
3	Foreign Language
<b>18</b>	<b>Semester Hours</b>
<b>Spring Semester Year 1</b>	
3	ENGL 1023 Composition II
3	MUTH 1603 Music Theory I (spring only)
1	MUTH 1621 Aural Perception I
1	MUAC 1231 Piano for Music Majors II (spring only)
3	MUAP 1103 Applied Voice/Instrument
1	MUAC 1141 or 1151 German for Singers or French for Singers
1	†‡MUEN Music Ensemble (see adviser)
3	Foreign Language
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 2</b>	
3	†MUTH 2603 Music Theory II (MUTH 1603)
1	MUTH 1631 Aural Perception II
1	†MUAC 2221 Piano for Music Majors III (fall only)

2	†MUAC 2111/2121 Music Technology I/II
3	MUAP 1103 Applied Voice/Instrument
1	†‡MUEN Music Ensemble (see adviser)
3	MLIT 1003 Music Lecture (for music majors) or HIST 1003 or HIST 1013 (as needed)
3	Foreign Language
<b>17</b>	<b>Semester Hours</b>
<b>Spring Semester Year 2</b>	
3	MLIT 1003 Music Lecture (for music majors) or HIST 1003 or HIST 1013 (as needed)
3	†‡MUTH 3603 Music Theory III MUTH 1603, MUTH 2603)
1	†MUTH 2621 Aural Perception III
1	†MUAC 2231 Piano for Music Majors IV (spring only)
3	MUAP 1103 Applied Voice/Instrument
1	MUAC 1141 or 1151 German for Singers or French for Singers (as needed)
1	†‡MUEN Music Ensemble (see adviser)
3	MATH 1203 College Algebra (or higher-level math)
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 3</b>	
3	†‡MUTH 3613 Music Theory IV (MUTH 1603, MUTH 2603)
1	†MUTH 2631 Aural Perception IV
3	†‡MUHS 3703 History of Music to 1800 (MLIT 1003, HIST 1003 and HIST 1013)
3	†‡MUHS 4763 Survey of Vocal Literature I or Core from areas a, b, c, or d (as needed)
3	†‡MUAP 3103 Applied Voice/Instrument
1	†‡MUEN Music Ensemble (see adviser)
1	†‡MUPD 3801 Conducting I
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
3	†‡MUTH 4703 Form and Analysis (MUTH 2603)
3	†‡MUHS 3713 History of Music 1800-present (MUHS 3703)
3	†‡MUHS 4773 Survey of Vocal Literature II or Core from areas a, b, c, or d (as needed)
2	†‡MUAP 3102 Applied Voice/Instrument
1	†‡MUAP 3201 Recital I
1	†‡MUEN Music Ensemble (see adviser)
1	†‡MUPD 3861 Conducting II: Vocal Music (MUPD 3801)
3	†Core from area f (if needed) or Core from areas a, b, c, or d (as needed)
<b>17</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	†‡MUHS 4253 Special Topics in Music History
3	†‡MUHS 4763 Survey of Vocal Literature I (if needed) or Core from areas a, b, c, or d (as needed)
3	†‡MUAP 3103 Applied Voice/Instrument
1	†‡MUEN Music Ensemble (see adviser)
4	Core from area e
3	Core from areas a, b, c, or d (as needed)
<b>17</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3	†‡MUHS 4773 Survey of Vocal Literature II (if needed) or Core from areas a, b, c, or d (as needed)
2	†‡MUAP 3102 Applied Voice/Instrument
1	†‡MUAP 4201 Recital II
1	†‡MUEN Music Ensemble (see adviser)
4	Core from area e
3	Core from areas a, b, c, or d (as needed)
<b>14</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Requirements for a Minor in Music:** A minimum of 18 semester hours in music courses, of which at least nine hours must be selected from MUTH, MUHS, and/or MLIT courses, the specific courses to be determined by the

student in consultation with a music faculty adviser, the adviser to be appointed by the music faculty on the basis of each student's particular interests. The student must notify the Department of Music of his/her intent to minor.

For requirements for advanced degrees in music, see the *Graduate School Catalog*.

SEE PAGES 372-375 FOR MUSIC (MLIT through MUTH) COURSES

## PHILOSOPHY (PHIL)

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- Professor Spellman
- Professor Emeritus Nissen
- Associate Professors Adler, Funkhouser, Lee, Lyons, Minar, Senior, Ward
- Associate Professor Emeritus Edwards
- Assistant Professor McMullin

**Requirements for a Major in Philosophy:** 33 semester hours in philosophy to include:

PHIL 2203 or PHIL 4253  
PHIL 4003  
PHIL 4033

Three hours to be chosen from PHIL 4013, PHIL 4023, PHIL 4043, PHIL 4063, PHIL 4073, PHIL 4083, and PHIL 4123.

PHIL 3983 or a successfully defended honors thesis in philosophy.

**Writing Requirement:** The writing requirement can be satisfied either by completion of an acceptable thesis or by approval of a research/analytical paper from any 4000-level course in philosophy submitted by the student to the Philosophy Department's Undergraduate Committee.

**Requirements for Departmental Honors in Philosophy:** The purpose of the honors program is to provide the honors candidate with the opportunity of achieving greater maturity in dealing with philosophical ideas through independent study. The candidate's plan of study will include the reading of significant philosophical works. Normally a candidate will complete a total of three to six hours of independent readings in philosophy during his or her junior and senior years. In addition, it is recommended that the candidate register for honors courses and colloquia. One colloquium is required.

The candidate will be expected to take 12 hours (which may include 6 hours of thesis) in Honors Studies and to write an essay during his or her senior year and give a satisfactory account of the honors readings and senior essay in an oral examination. Successful completion of the requirements will be recognized by the award of the distinction "Philosophy Scholar *Cum Laude*" at graduation. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate's program of honors studies.

**Requirements for a Combined Major in Philosophy and African-American Studies:** 36 semester hours, consisting of 18 hours in philosophy and 18 hours in African-American studies. The philosophy requirement is: 18 semester hours in philosophy to include either 12 hours over 3000 and PHIL 2203 or PHIL 4253, or 15 hours over 3000. The hours over the 3000-level must include at least three hours of value theory to be chosen from PHIL 4113, PHIL 4123, PHIL 4133, or PHIL 4143, and at least six hours in the history of philosophy (PHIL 4003, PHIL 4013, PHIL 4023, PHIL 4033,

PHIL 4043, PHIL 4063, PHIL 4073, PHIL 4083) including PHIL 4003 or PHIL 4033. See African-American studies on page 128.

## Philosophy Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program as well as page 126 of this chapter for College requirements. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
3	PHIL 2003 Introduction to Philosophy
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3-4	†MATH 2043, 2053, 2183 or 2554 or Core from areas a, b, c, d or e (as needed)
3	PHIL 2203 Logic
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15-16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	†‡ PHIL 4003 Ancient Greek Philosophy
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
3	General Elective
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	†‡ PHIL 4033 Modern Philosophy
3	†Core from area g (if needed) or †Advanced Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	General Elective
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 3	
3	†‡ PHIL course from Philosophy Area Group 1
3	†‡PHIL 3000-4000 Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	†‡ PHIL course from History of Philosophy Group 2
3	†Core from area g (if still needed) or †Advanced Level Elective
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
3	†Advanced Level Elective
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	†‡ PHIL course from Philosophy Area Group 1
3	†‡PHIL 3000-4000 Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
4	General Electives
<b>16</b>	<b>Semester Hours</b>

Spring Semester Year 4	
3	†‡ PHIL 3000-4000 Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	†‡PHIL 3983 Capstone Course
3	†Advanced Level Elective
3	General Elective
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 121 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 121 of this chapter.

**Philosophy Area Group 1:** Students may take any additional upper level course in philosophy, but it is recommended that philosophy majors take at least two of the following:

- PHIL 4113 Social and Political Philosophy
- PHIL 4133 Contemporary Ethical Theory
- PHIL 4143 Philosophy of Law
- PHIL 4203 Theory of Knowledge
- PHIL 4213 Philosophy of Science
- PHIL 4303 Philosophy of Religion
- PHIL 4403 Philosophy of Art
- PHIL 4423 Philosophy of Mind
- PHIL 4603 Metaphysics

**History of Philosophy Group 2** (does NOT include Ancient Greek Philosophy and Modern Philosophy which are both required):

- Philosophy majors are required to take any two of the following courses:
- PHIL 4013 Platonism and Origin of Christian Theology
  - PHIL 4063 Twentieth Century Continental Philosophy
  - PHIL 4023 Medieval Philosophy
  - PHIL 4073 History of Analytic Philosophy
  - PHIL 4043 Nineteenth Century Continental Philosophy
  - PHIL 4083 Existentialism
  - PHIL 4123 Classical Ethical Theory

**Requirements for a Minor in Philosophy:** 18 semester hours in philosophy to include PHIL 2203 or PHIL 4253, and either PHIL 4003 or PHIL 4033. A student may earn either a minor or a combined major in philosophy but not both. A student must notify the department of his or her intent to minor.

For requirements for advanced degrees in philosophy, see the *Graduate School Catalog*.

SEE PAGE 378 FOR PHILOSOPHY (PHIL) COURSES

## PHYSICS (PHYS)

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- Distinguished Professors Salamo, Xiao
- Professors Bellaiche, Gea-Banacloche, Gupta, Harter, Lacy, Lieber, Pederson, Singh, Thibado, Vyas
- Research Professor Vickers
- Professors Emeriti Chan, Hobson, Hughes, Richardson, Zinke
- Associate Professors Fu, Li, Oliver, Stewart (G.)
- Assistant Professors Chakhalian, Gross, Kenefick (D.), Kenefick (J.), Stewart (J.)
- Instructors Skinner, Snyder

**Requirement for B.S. Degree with a Major in Physics:** The student must present a minimum of 40 semester hours in physics including PHYS 2054, PHYS 2074, PHYS 2094, PHYS 3414, PHYS 3614, PHYS 4073, PHYS 4991 and courses in one of five concentrations:

**Professional:** PHYS 3113, PHYS 4333, and 10 semester hours numbered 3000 and above in physics or astronomy.

**Optics:** PHYS 3544, any 1 course selected from PHYS 4734, PHYS 4754, or PHYS 4774, and 8 semester hours numbered 3000 and above in physics or astronomy.

**Electronics:** PHYS 220V (up to 2 hours), PHYS 320V (2 or more hours), PHYS 4333, and 6 semester hours numbered 3000 and above in physics or astronomy.

**Computational:** PHYS 3113 and 13 semester hours including courses numbered 3000 and above in physics, astronomy, advanced computer science, or mathematics chosen with the adviser's permission.

**Biophysics:** PHYS 3113 and 13 semester hours including courses numbered 3000 and above in physics, astronomy, biology, and chemistry chosen with the adviser's permission.

**For all five of the possible concentrations the following mathematics courses are required:** MATH 2554, MATH 2564, MATH 2574, MATH 3404, and MATH 3423. CSCE 4513, CSCE 4423, or MEEG 2703 can be substituted for MATH 3423 with the adviser's approval. In addition, CHEM 1103/1101L and CHEM 1123/1121L, or an approved 8 hours of laboratory-based courses in CSCE 2004 and CSCE 2014 are required.

Majors must propose participation in a research experience project no later than the end of their junior year of study. A written report of the results must be submitted during Senior Seminar (PHYS 4991).

## Physics B.S. Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program as well as page 126 of this chapter for College requirements. Physics offers five concentrations: biophysics, computational, electronics, optics and professional. The eight-semester plan for each concentration is listed below.

The following eight-semester plan refers to additional B.S. Core Requirement Areas (areas a, b, c, d, e, and f) found on page 203 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Well prepared students may skip BIOL 1543/1541L, and go immediately into the biology core courses. Students should consult their advisers.

## Biophysics Concentration

Well prepared students may skip BIOL 1543/1541L, and go immediately into the biology core courses.

Fall Semester Year 1	
3	ENGL 1013 Composition I
4	BIOL 1543/1541L Principles of Biology
4	†MATH 2554 Calculus I
4	†PHYS 2054 University Physics I
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
4	†MATH 2564 Calculus II
3	BIOL 2533 Cell Biology*

4	†PHYS 2074 University Physics II
3	Core from areas a, b, c or e (as needed)
<b>17</b>	<b>Semester Hours</b>
<b>Fall Semester Year 2</b>	
4	†PHYS 2094 University Physics III
4	†MATH 2574 Calculus III
4	CHEM 1103/1101L University Chemistry I
3	Core from areas a, b, c or e (as needed)
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 2</b>	
4	‡†PHYS 3614 Modern Physics
4	CHEM 1123/1121L University Chemistry II
4	‡†MATH 3404 Differential Equations
4	†BIOL 2013/2011L General Microbiology*
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 3</b>	
3	‡† PHYS 3113 Analytical Mechanics
3	‡†MATH 3423 Advanced Applied Math I
3	Core from areas a, b, c or e (as needed)
4	‡†CHEM 3603/3601L Organic Chemistry I
1	BIOL 2001 Bibliographic practicum
<b>14</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
4	‡† PHYS 3414 Electromagnetic Theory
4	‡CHEM 3613/3611L Organic Chemistry II
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
3	†Core from area f (if needed) or General Electives
<b>17</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	‡†PHYS 4073 Introduction to Quantum Mechanics
3	‡†BIOL 4003 Laboratory Techniques in Microbiology*
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3	‡BIOL 3323 General Genetics
3	‡BIOL 3023 Evolutionary Biology
1	‡†PHYS 4991 Senior Seminar
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- \* Or another chemistry, biology, astronomy, or physics elective from PHYS/ASTR Group A (below).
- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Computational Concentration**

<b>Fall Semester Year 1</b>	
3	ENGL 1013 Composition I
3	†MATH 2554 Calculus I
3	Core from areas a, b, c or e
4	†PHYS 2054 University Physics I
<b>14</b>	<b>Total Hours</b>
<b>Spring Semester Year 1</b>	
3	ENGL 1023 Composition II
4	†MATH 2564 Calculus II
3	Core from areas a, b, c or e
3	Core from areas a, b, c or e

4	†PHYS 2074 University Physics II
<b>17</b>	<b>Total Hours</b>
<b>Fall Semester Year 2</b>	
4	†PHYS 2094 University Physics III
4	†MATH 2574 Calculus III
3	Core from areas a, b, c or e
4	CSCE 2004 Programming Foundations I
<b>15</b>	<b>Total Hours</b>
<b>Spring Semester Year 2</b>	
4	‡†PHYS 3614 Modern Physics
3	Core from areas a, b, c or e
4	‡†MATH 3404 Differential Equations
4	CSCE 2014 Programming Foundations II
<b>15</b>	<b>Total Hours</b>
<b>Fall Semester Year 3</b>	
3	‡† PHYS 3113 Analytical Mechanics
3	‡†MATH 3423 Advanced Applied Math
3	†Core from area f (if needed) or Advanced Level Elective
3	Core from areas a, b, c or e
3	Core from areas a, b, c or e
<b>15</b>	<b>Total Hours</b>
<b>Spring Semester Year 3</b>	
4	‡† PHYS 3414 Electromagnetic Theory
3	‡†CSCE 3143 Data Structures (recommended) or PHYS/ASTR Group A or advanced level electives*
3	†Core from area f (if needed) or Advanced Level Elective
3	Core from areas a, b, c or e
3	‡†PHYS/ASTR Group A or advanced level electives*
<b>16</b>	<b>Total Hours</b>
<b>Fall Semester Year 4</b>	
3	‡†CSCE 3313 Algorithms or (recommended) PHYS/ASTR Group A or advanced level electives*
6	Core from areas a, b, c or e
4	‡†PHYS/ASTR Group A or advanced level electives*
3	‡†PHYS 4073 Introduction to Quantum Mechanics
<b>16</b>	<b>Total Hours</b>
<b>Spring Semester Year 4</b>	
4	‡†PHYS/ASTR Group A or advanced level electives*
1	‡†PHYS 4991 Senior Seminar
3	Core from areas a, b, c or e
8	†Advanced level electives
<b>16</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- \* Nine hours of upper division computer science or mathematics courses can count toward the physics major.
- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Electronics Concentration**

<b>Fall Semester Year 1</b>	
3	ENGL 1013 Composition I
4	†MATH 2554 Calculus I
3	Core from areas a, b, c or e (as needed)
4	†PHYS 2054 University Physics I
1	PHYS 220V Electronics I*
<b>15</b>	<b>Total Hours</b>
<b>Spring Semester Year 1</b>	
3	ENGL 1023 Composition II
4	†MATH 2564 Calculus II
3	Core from areas a, b, c or e (as needed)

1	PHYS 220V Electronics I*
4	†PHYS 2074 University Physics II
<b>15</b>	<b>Total Hours</b>
<b>Fall Semester Year 2</b>	
4	†PHYS 2094 University Physics III
3	Core from areas a, b, c or e (as needed)
4	†MATH 2574 Calculus III
4	CHEM 1103/1101L University Chemistry I and Lab
1	‡PHYS 320V Electronics II*
<b>16</b>	<b>Total Hours</b>
<b>Spring Semester Year 2</b>	
4	‡†PHYS 3614 Modern Physics
3	Core from areas a, b, c or e (as needed)
4	‡†MATH 3404 Differential Equations
4	CHEM 1123/1121L University Chemistry II and Lab
1	‡PHYS 320V Electronics II*
<b>16</b>	<b>Total Hours</b>
<b>Fall Semester Year 3</b>	
3	‡†MATH 3423 Advanced Applied Math I
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
3	General Elective
<b>15</b>	<b>Total Hours</b>
<b>Spring Semester Year 3</b>	
4	‡†PHYS 3414 Electromagnetic Theory
3	‡†PHYS 4333 Thermal Physics
3	Core from areas a, b, c or e (as needed)
3	†Core from area f (if needed) or General Elective
3	General Elective or PHYS/ASTR Group A
<b>16</b>	<b>Total Hours</b>
<b>Fall Semester Year 4</b>	
3	‡†PHYS 4073 Introduction to Quantum Mechanics
2-3	‡†PHYS 320V Electronics II1 or other ‡†PHYS/ASTR Group A
3	General Elective or ‡†PHYS/ASTR Group A
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
<b>14-15</b>	<b>Total Hours</b>
<b>Spring Semester Year 4</b>	
3	‡†PHYS 4713 Introduction to Solid State Physics
3	‡†PHYS/ASTR Group A (as needed) or General Electives
1	‡†PHYS 4991 Senior Seminar
9	General Electives
<b>16</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- \* Electronics I & II are unusual in that they can be taken for variable amounts of credit.
- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Optics Concentration**

<b>Fall Semester Year 1</b>	
3	ENGL 1013 Composition I
4	†MATH 2554 Calculus I
3	Core from areas a, b, c or e (as needed)
4	†PHYS 2054 University Physics I
1	PHYS 220V Electronics I*
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 1</b>	
3	ENGL 1023 Composition II
4	†MATH 2564 Calculus II

3	Core from areas a, b, c or e (as needed)
2	PHYS 220V/320V Electronics I/II*
4	†PHYS 2074 University Physics II
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 2</b>	
4	†PHYS 2094 University Physics III
4	CHEM 1103/1101L University Chemistry I and Lab
4	†MATH 2574 Calculus III
1	PHYS 320V Electronics II*
3	Core from areas a, b, c or e (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 2</b>	
4	‡†PHYS 3614 Modern Physics
3	Core from areas a, b, c or e (as needed)
4	‡†MATH 3404 Differential Equations
4	CHEM 1123/1121L University Chemistry II and Lab
<b>15</b>	<b>Semester Hours</b>
<b>Fall Semester Year 3</b>	
4	‡†PHYS/ASTR Group A
3	‡†MATH 3423 Advanced Applied Math I
4	‡†PHYS/ASTR Group A or General Elective
3	Core from areas a, b, c or e (as needed)
<b>14</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
4	‡†PHYS 3414 Electromagnetic Theory
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
3	†Core from area f (if needed) or General Elective
3	General Elective
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	‡†PHYS 4073 Introduction to Quantum Mechanics
4	‡†PHYS 3544 Optics
3	General Electives
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
4	Core from areas a, b, c or e (as needed)
7	General Electives
1	‡†PHYS 4991 Senior Seminar
4	‡†PHYS Optics Elective (4734, 4754, or 4774)
<b>16</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- \* These are examples of elective courses in Physics. Electronics I & II are unusual in that they can be taken for variable amounts of credit.
- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Professional Concentration**

<b>Fall Semester Year 1</b>	
3	ENGL 1013 Composition I
4	†MATH 2554 Calculus I
3	Core from areas a, b, c or e (as needed)
4	†PHYS 2054 University Physics I
1	PHYS 220V Electronics I*
<b>15</b>	<b>Total Hours</b>
<b>Spring Semester Year 1</b>	
3	ENGL 1023 Composition II
4	†MATH 2564 Calculus II
3	Core from areas a, b, c or e (as needed)

1	PHYS 220V Electronics I*
4	†PHYS 2074 University Physics II
<b>15</b>	<b>Total Hours</b>
<b>Fall Semester Year 2</b>	
4	†PHYS 2094 University Physics III
3	Core from areas a, b, c or e (as needed)
4	†MATH 2574 Calculus III
3	CHEM 1103 University Chem. I (if needed) or Core from areas a, b, c or e (as needed)
2	‡PHYS 320V Electronics II*
<b>16</b>	<b>Total Hours</b>
<b>Spring Semester Year 2</b>	
4	‡PHYS 3614 Modern Physics
3	Core from areas a, b, c or e (as needed)
4	‡MATH 3404 Differential Equations
4	CHEM 1123/1121L University Chemistry II and Lab
<b>15</b>	<b>Total Hours</b>
<b>Fall Semester Year 3</b>	
3	‡PHYS 3113 Analytical Mechanics
3	‡MATH 3423 Advanced Applied Math I
3	†Core from area f (if needed) or †Advanced Level Elective
3	Core from areas a, b, c or e (as needed)
3	General Elective
<b>15</b>	<b>Total Hours</b>
<b>Spring Semester Year 3</b>	
4	‡PHYS 3414 Electromagnetic Theory
3	‡PHYS 4333 Thermal Physics
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
3	†Core from area f (if needed) or General Elective
<b>16</b>	<b>Total Hours</b>
<b>Fall Semester Year 4</b>	
3	‡PHYS 4073 Introduction to Quantum Mechanics
3	‡PHYS/ASTR Group A
3	General Elective
3	Core from areas a, b, c or e (as needed)
3	Core from areas a, b, c or e (as needed)
1	‡PHYS 4621L Modern Physics Lab
<b>16</b>	<b>Total Hours</b>
<b>Spring Semester Year 4</b>	
3	‡PHYS/ASTR Group A
3	‡PHYS/ASTR Group A (as needed) or General Electives
1	‡PHYS 4991 Senior Seminar
3	Core from areas a, b, c or e (as needed)
6	General Electives (to complete 124 hour rule)
<b>16</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

\* These are examples of elective courses in Physics. Electronics I & II are unusual in that they can be taken for variable amounts of credit.  
 † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter  
 ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**PHYS/ASTR Group A.** Variable hours required in consultation with adviser:

- ASTR 3033 Solar System Astronomy
- ASTR 3053 Stellar Systems
- ASTR 4013 Astrophysics
- PHYS 320V Electronics II
- PHYS 306V Projects
- PHYS 3544 Optics
- PHYS 3923H Honors Colloquium
- PHYS 399VH Independent Honors Study
- PHYS 4213 Physics of Devices

- PHYS 4621L Modern Physics Lab
- PHYS 4713 Solid State Physics
- PHYS 4734 Laser Physics
- PHYS 4754 Non-linear Optics
- PHYS 4774 Optical Properties
- PHYS 4794 Lightwave Communications
- PHYS 4803 Mathematical Physics
- PHYS 498V Senior Thesis

**Requirements for a B.A. Degree with a Major in Physics:** This track is for students desiring a broader program in the arts, sciences, and social sciences while majoring in physics. This program is recommended for pre-medical, journalism, pre-business, pre-law and other students planning careers in fields for which a physics education would be beneficial. For B.A. students seeking teaching licensure, see the Teacher Licensure Requirements below. This program requires a total of 124 semester hours. The student must present 24 semester hours in physics or astronomy, including PHYS 2013/2011L, PHYS 2033/2031L, PHYS 3603/3601L, PHYS 4991, and 11 semester hours chosen from PHYS 220V and/or any physics or astronomy courses at the 3000 level or above. The student must also present MATH 1285 (or MATH 1203 and MATH 1213) and MATH 2554 (or MATH 2043) as well as two additional courses at the 2000 level or above in mathematics or statistics. An additional 9 semester hours at the 3000 level or above must be taken from a single special emphasis area chosen with the adviser's approval. The special emphasis area may be chosen in any single degree-granting department at the University of Arkansas. For B.A. students seeking teacher licensure, the special emphasis area may involve courses from more than one degree-granting department at the University of Arkansas with the approval of their adviser.

**Physics B.A. Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program as well as page 126 of this chapter for College requirements. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

The Physics B.A. program includes requirements for a special emphasis area. In this case, journalism was used as an example. Courses in Boldface indicate courses recommended by the Department of Journalism as the journalism foundation needed for science reporting. It is recommended that the free electives be chosen in a second science, or in journalism.

<b>Fall Semester Year 1</b>	
3	ENGL 1013 Composition I
3	<b>JOUR 1023 Media and Society*</b> (required for journalism sequence) or General Elective
3-5	Begin Math Sequence
3	Core from areas a, b, c, d or e (as needed)
0-3	Core from areas a, b, c, d or e (as needed) (delayed if 5 hour math is taken)
<b>14-15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 1</b>	
3	ENGL 1023 Composition II
3	<b>JOUR 1033 Fundamentals of Journalism*</b> (required for journalism sequence) or General Elective
3	Continue Math Sequence (if needed) or Core from areas a, b, c, d or e (as needed)
4	BIOL 1543/1541L Principles of Biology, or other biological science core from group f

3	Core from areas a, b, c, d or e (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 2</b>	
4	†PHYS 2013/2011L College Physics I
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	†Continue Math Sequence (if needed) or †Advanced Level Elective
3	†JOUR 2013 News Reporting I* (pre-req. JOUR 1023 and 1033) or General Elective
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 2</b>	
4	†PHYS 2033/2031L College Physics II
3	†‡JOUR 3023 News Reporting II* or other Special Emphasis Area**
3	†MATH or STAT elective
3	†Core from area g (as needed) or †Advanced Level Elective
3	Core from areas a, b, c, d or e (as needed)
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 3</b>	
3	†‡PHYS 3603 Introduction to Modern Physics
3	MATH or STAT elective
3	†Core from area g (as needed) or †Advanced Level Elective
3	†‡JOUR 3633 Media Law* or other Special Emphasis Area**
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
1	†‡PHYS 3601L Modern Physics Lab
3	†‡PHYS/ASTR Group A
3	†‡JOUR 3013 Editing* or other Special Emphasis Area**
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	†Advanced level elective
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
2-4	†‡PHYS/ASTR Group A
3-4	†‡PHYS/ASTR Group A
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	†Advanced level elective
<b>14-17</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3	†‡PHYS 4203 Physics of Devices, or other PHYS/ASTR Group A
1	†‡PHYS 4991 Senior Seminar
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	†Advanced level elective
3	†Advanced level elective
<b>16</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

\* Required for journalism emphasis.

\*\* Additional 9 semester hours at 3000 level or above from a single emphasis area chosen with adviser approval. This requirement is automatically fulfilled by the bold-faced upper-level journalism courses.

† Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter

‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

Group A: Eleven semester hours chosen from:

PHYS 220V Introduction to Electronics or any other PHYS or ASTR classes numbered 3000 or above.

**Writing Requirement:** Students majoring in physics may satisfy the Fulbright College writing requirement by means of a senior thesis (PHYS 498V), an honors thesis submitted in fulfillment of the requirements of the honors program (PHYS 399VH), or by means of a paper submitted as part of PHYS 4991 or any physics or astronomy course numbered 3000 or above. Students

electing the last route must obtain approval of the instructor during the first three weeks of the semester. The research/analytical paper should demonstrate competency in the use of word processing software and also at least one computer analytical tool such as a spreadsheet, mathematical or graphics program, or an original program written by the student.

**Assessment of Student Learning:** In accordance with state, University, and college requirements, all students must have learning assessed before graduation. Students majoring in physics will be assessed in the course PHYS 4991, which must be taken in the year prior to graduation.

**Requirements for Departmental Honors in Physics:** The Departmental Honors Program in Physics provides upper-division undergraduate students with an opportunity to formally participate in scholarly physics activities. Honors candidates carry out independent study and research under the guidance of the physics faculty and participate in special honors classes, seminars, and colloquia. Outstanding student achievement will be recognized by awarding the distinction “Physics Scholar *Cum Laude*” at graduation. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate’s program of honors studies. To be considered as a candidate for higher distinctions, however, a student must achieve at least a 3.50 cumulative grade-point average in physics and mathematics. In addition to satisfying the general college requirements for the bachelor’s degree with honors, an honors candidate in physics must

1. become a candidate no later than the first semester of the junior year of study,
2. enroll in honors sections of physics courses when available,
3. enroll in six hours of honors research PHYS 399VH,
4. enroll in at least one physics honors colloquium PHYS 3923H,
5. complete and orally defend an honors thesis based upon the project carried out in PHYS 399VH, and
6. achieve a cumulative grade-point average of 3.125 in physics.

**Requirements for a Minor in Physics:** Students wishing to obtain a minor in physics must take either PHYS 2013/2011L, PHYS 2033/2031L or PHYS 2054/2050L, PHYS 2074/2070L, plus at least seven additional hours of physics courses numbered 3000 or above. A student must notify the department of his or her intent to minor.

**Physics (B.A. or B.S.) Physical/Earth Science Teacher Licensure Requirements:**

Please refer to the Secondary Education Requirements for Fulbright College Students on page 118.

Students wanting to teach science in middle school should consult with a middle level adviser in the College of Education and Health Professions.

For information on advanced degrees in physics, see the *Graduate School Catalog*.

SEE PAGE 379 FOR PHYSICS (PHYS) COURSES

## POLITICAL SCIENCE (PLSC)

Margaret Reid  
Chair of the Department  
428 Old Main  
479-575-3356

<http://www.uark.edu/depts/plscinfo/>

- Professors Kelley, Reid, Shields
- Professors Emeriti Neuse, Savage, Vanneman
- Associate Professors Conge, Dowdle, Ghadbian, Kerr, Parry, Ryan, Schreckhise
- Associate Professor Emeritus Tweraser
- Assistant Professors Ford, Hansen, Kim, Stewart, Zeng
- Assistant Professor Emeritus Elston

**Requirements for B.A. Degree with a Major in Political Science:**

30 semester hours at least 21 of which must be above 3000.

1. Students are required to take both PLSC 2003 American National Government and PLSC 2013 Intro. to Comparative Politics.
2. Students must choose one of the following:  
 PLSC 2813 Intro. to International Relations  
 PLSC 3103 Intro. to Public Administration  
 PLSC 3963 Modern European Political Thought.
3. Students fulfill the remaining requirements from among any of the available political science courses.

At least 21 hours must be in the 3000-4000 level. No more than 9 hours may come from PLSC 300V, 394V, 498VH, or 499VH.

**American Politics**

PLSC 2003, PLSC 3223, PLSC 3233, PLSC 3243, PLSC 3253, PLSC 4203, PLSC 4213, PLSC 4223, PLSC 4243, PLSC 4253, PLSC 4283, PLSC 4373

**Comparative Politics**

PLSC 3503, PLSC 3523, PLSC 3573, PLSC 4513, PLSC 4563, PLSC 4573, PLSC 4593

**International Politics**

PLSC 3803, PLSC 3813, PLSC 3823, PLSC 3853, PLSC 4803, PLSC 4843, PLSC 4873

**Political Theory**

PLSC 3603, PLSC 3913, PLSC 3933, PLSC 3953, PLSC 3963, PLSC 4903, PLSC 4923

**Public Administration**

PLSC 3103, PLSC 3153, PLSC 4193

**Writing Requirement:** The college writing requirement is fulfilled by submitting an acceptable research/analytical paper to the department for approval at least four weeks prior to graduation. The paper may be derived from completion of an honors essay (PLSC 499VH), a senior thesis (PLSC 498V), or some other advanced course in political science. The student is urged to consult with his or her faculty adviser no later than early in the first semester of the senior year.

**Requirements for Departmental Honors in Political Science:** The Departmental Honors Program in Political Science offers junior and senior students the opportunity to enroll in enriched and advanced courses and to do independent research in their senior year. Honors candidates are eligible for honors colloquia, honors courses, some advanced seminars, and an independent studies project, usually in close collaboration with one or more members of the faculty.

In addition to satisfying the general college honors requirements for the bachelor's degree, honors candidates in political science must successfully complete a total of 36 hours of Political Science credit, including 12 hours of honors course work. Six of the 12 hours will be honors essay credit (PLSC 499VH) and will be taken during the senior year. Successful completion and defense of senior essay or thesis is a major part of the Political Science Honors Program, and students should begin discussing it with the Honors Adviser during their junior year. The preferred methods for satisfying the remaining six hours is to enroll in an honors colloquium (3923H) in political science or another department, by enrolling in a graduate-level seminar in political science, or by enrolling in PLSC 399VH (honors course).

Under exceptional circumstances, students may satisfy honors requirements by enrolling in PLSC 394V, by enrolling in honors sections in other departments, or by enrolling in colloquia or graduate seminars in other departments, each of which requires approval by the department chairperson. Successful completion of the requirements will be recognized by the award of the distinction "Political Science Scholar *Cum Laude*" at graduation. Higher degree distinctions are recommended only in truly exceptional cases and are

based upon the whole of the candidate's program of honors studies. For full details consult the chairperson of the political science department.

**Political Science Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program as well as page 126 of this chapter for College requirements. The following eight-semester plan refers to additional BA Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-4	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
3	PLSC 2003 American Nat'l. Government or Core from areas a, b, c, d, or e
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
<b>15-16</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3	†MATH 2043, 2053, 2183 or Core from areas a, b, c, or d (as needed)
3	PLSC 2013 Intro to Comparative Politics or PLSC 2003 (if not taken earlier)
3	PLSC course from Group 2 or Core from areas a, b, c, d, or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	PLSC course from Group 2 or Core from areas a, b, c or d (as needed)
3	PLSC 2013 (if not taken earlier) or †PLSC course from Group 3
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	†Core from area g (if required) or †Advanced Level Elective
3	PLSC course from Group 2 (if not taken) or †PLSC course from Group 3
3	Core from areas a, b, c, d, or e (as needed) or PLSC course from Group 1
3	Core from areas a, b, c, d, or e (as needed)
3	General Elective
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 3	
3	†PLSC course from Group 3
3	†PLSC course from Group 3
3	†Core from area g (if required) or †Advanced Level Elective
3	Core from areas a, b, c, d, or e (as needed)
4	Core from area f
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	†PLSC course from Group 3
3	†PLSC course from Group 3
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	†PLSC course from Group 3
3	†PLSC course from Group 3 or †Upper Level ARSC course (as needed)
3	Core from areas a, b, c, d, or e (as needed)
3	Core from areas a, b, c, d, or e (as needed)
3	†Advanced Level Elective
1	General Elective
<b>16</b>	<b>Semester Hours</b>



Spring Semester Year 4	
3	†‡PLSC course from Group 3 or General Elective
3	†‡Upper Level ARSC course (as needed) or General Elective
3	†Advanced Level Elective
3	†Advanced Level Elective
3	General Elective
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Political Science (B.A.) Social Studies Teaching Licensure Requirements:**

Please refer to the Secondary Education Requirements for Fulbright College Students on page 118.

Students wanting to teach social studies in middle school should consult with a middle level adviser in the College of Education and Health Professions.

**Combined Majors**

**Political Science and African-American Studies:** For the requirements for a combined major in political science and African-American studies, see page 128.

**Political Science and Journalism:** The combined major in political science and journalism is recommended for those students who have a strong interest in the reporting of public affairs as a career. The political science requirement may be satisfied by 24 semester hours of courses including PLSC 2003, PLSC 2013, PLSC 4373, and 15 additional hours of advanced political science courses elected from one or the other of two field concentrations. Those wishing to emphasize American political affairs may elect the additional hours from the following:

PLSC 3103	PLSC 3153	PLSC 3183	PLSC 3223
PLSC 3233	PLSC 3243	PLSC 3253	PLSC 3603
PLSC 3853	PLSC 3923H	PLSC 3913	PLSC 3933
PLSC 394V	PLSC 399VH	PLSC 4193	PLSC 4203
PLSC 4213	PLSC 4243	PLSC 4253	PLSC 4903

Alternatively, a foreign affairs concentration may be pursued by electing the advanced hours from the following courses:

PLSC 3503	PLSC 3523	PLSC 3533	PLSC 3553
PLSC 3573	PLSC 3603	PLSC 3803	PLSC 3813
PLSC 3823	PLSC 3853	PLSC 3923H	PLSC 394V
PLSC 3953	PLSC 3963	PLSC 399VH	
PLSC 4513	PLSC 4563	PLSC 4573	
PLSC 4593	PLSC 4803	PLSC 4813	
PLSC 4823	PLSC 4843	PLSC 4873	

For the eight-semester program plan or the journalism requirements, see the combined major in Journalism and Political Science on page 170. Students should consult with their adviser in each department.

**Political Science and Latin American and Latino Studies:** For the requirements for a combined major in political science and Latin American studies, see page 171.

**Requirements for a Minor in Political Science:** 18 hours including PLSC 2003 or PLSC 2013. At least 9 of these hours must be in courses numbered 3000 or above, and courses must be chosen from at least two of the five political science fields. Students should consult with an adviser in the department for the selection of appropriate courses.

**Minor in Legal Studies:** This minor will introduce undergraduate students to the study and application of law by taking law-related courses in a

number of disciplines. It provides a focus for students who are interested in the law, whose careers will require a measure of legal knowledge, or for those considering entering law school.

**Requirements for a Minor in Legal Studies:** 15 semester hours from the following:

AGEC 3503	ARCH 5323	BLAW 3033	CMJS 3003
CMJS 3503	COMM 4113	FDSC 3202	INEG 3113
JOUR 3633	OMGT 4313	PHIL 4143	PLSC 3243
PLSC 3813	PLSC 4193	PLSC 4253	PLSC 4263
SCWK 3533			

Students should consult with their advisers each semester.

For requirements for the M.A. degree in political science, the M.P.A degree, or the combined J.D./M.P.A. degree, see the *Graduate School Catalog*.

SEE PAGE 380 FOR POLITICAL SCIENCE (PLSC) COURSES.

SEE PAGE 377 FOR PUBLIC ADMINISTRATION (PADM) COURSES

**PSYCHOLOGY (PSYC)**

Douglas A. Behrend

Chair of the Department

216 Memorial Hall

479-575-4256

<http://www.uark.edu/depts/psyc/>

[psycapp@uark.edu](mailto:psycapp@uark.edu)

- University Professor Emeritus Dana
- Professors Behrend, Cavell, Lohr, Schroeder, Stripling
- Professors Emeriti Knowles, Marr, Schuldt, Trapp, Witte
- Associate Professors Beike, Feldner, Freund, Lampinen, Levine, Petretic, Williams
- Associate Professors Emeriti Bonge, Westendorf
- Assistant Professors Bridges, Eidelman, Ham, Leen-Feldner
- Adjunct Professor Judges
- Adjunct Assistant Professor Cline, Irwin, Revelle, Scott
- Clinical Assistant Professor Perry
- Visiting Assistant Professor Zies

**Requirements for B.A. Degree with a Major in Psychology:** Minimum of 33 semester hours to include: PSYC 2003, PSYC 2013, and PSYC 3073; six hours chosen from PSYC 3013, PSYC 3023, PSYC 3093, PSYC 4053, or PSYC 4063; six hours chosen from PSYC 3103, PSYC 4073, PSYC 4123, PSYC 4143, PSYC 4183, PSYC 4193; three hours chosen from PSYC 328V or PSYC 4283; the remaining nine hours are free electives and may be chosen from any psychology course in this catalog, with no more than a total of six hours in 206V, 207V and 399VH combined. A grade of "C" or better is required in all psychology courses used to satisfy the 33 hours of the major. In addition, a 2.00 cumulative grade-point average is required on all work completed in the Department of Psychology.

Students who want to pursue graduate training in psychology are advised to begin preparations early in their undergraduate careers. Grade-point average, scores on the Graduate Record Examinations, effective communications skills, preparation in the natural sciences and mathematics, and research experience (e.g., honors project, directed readings, laboratory experience) are the major criteria considered by admissions committees. To gain this research experience students are strongly encouraged to take the advanced research course, PSYC 328V.

Students with applied, paraprofessional, or human-service interests who plan to enter the job market with a B.A. in psychology are strongly encour-

aged to take relevant courses in other areas of interest, including, but not limited to, anthropology, sociology, social work, human development and family studies, education, and business administration.

Students interested in business applications of psychology (e.g., marketing, management) are similarly encouraged to take related courses in the Sam M. Walton College of Business; minors are also available in several areas of business. For more information concerning psychology as a major or careers in psychology and related fields, please contact the Psychology Advising Coordinator, Memorial Hall, room 203.

**Writing Requirement:** Students majoring in psychology will satisfy the Fulbright College writing requirement by successful completion (a grade of at least a “C”) in either PSYC 328V or PSYC 428V, each of which requires a final research paper written in American Psychological Association style.

**Requirements for Graduation with Honors in Psychology:** Both the four-year and the Departmental Honors Program in Psychology provide undergraduate students with an opportunity to formally participate in scholarly psychology activities. Honors candidates carry out independent study and research under the guidance of the psychology faculty and participate in special honors classes, seminars, and colloquia. In addition to satisfying the general college honors requirements, honors candidates in psychology are required to complete and orally defend an honors thesis based upon the independent study carried out in PSYC 399VH. In order to successfully complete the required thesis, students should choose an honor’s adviser as early as possible. An adviser should be selected, and an Honor’s Agreement completed, no later than the first semester in a student’s junior year. Students must register for, and complete, a minimum of 6 hours of PSYC 399VH. PSYC 399VH may be taken for 1 to 6 hours of credit each semester and repeated for a maximum of 12 hours. Nine hours are ordinarily needed to complete the research project and to prepare the honors thesis.

Honors candidates in psychology are encouraged to enroll in as many honors classes, seminars, and colloquia as possible, or as required by the honor’s program in which they are enrolled. Students graduating with honors typically graduate *cum Laude*. Higher degree distinctions (*Magna cum Laude*, *Summa cum Laude*) are awarded by the Honors Council, recommended only in truly exceptional cases, and are based upon the whole of the candidate’s program of honors studies.

**Psychology Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university core requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Courses in psychology groups A, B and Capstone courses are listed after the program plan.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
3	PSYC 2003 General Psychology or Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
15	Semester Hours
Spring Semester Year 1	
3	ENGL 1023 Composition II
3-4	†MATH 2043, 2053, 2183 or 2554 or Core from areas a, b, c, d or e (as needed)
3	†PSYC 2013 Statistics for Psychologists or PSYC 2003 (if not taken earlier)
4	Core from area f (as needed)

3	Core from areas a, b, c, d or e or †‡PSYC Group A
16-17	Semester Hours
Fall Semester Year 2	
3	‡†PSYC course from Group A or Core from areas a, b, c, d or e (as needed)
3	‡†PSYC 3073 Research Methods or †PSYC 2013 (if not taken earlier)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
15	Semester Hours
Spring Semester Year 2	
3	†Core from area g (if still needed) or †Advanced Level Elective
3	†‡PSYC 3073 Research Methods or Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed) or †‡PSYC from Group A or B
3	Core from areas a, b, c, d or e (as needed)
3	General Elective
15	Semester Hours
Fall Semester Year 3	
3	‡†PSYC course from Group A or B
3	†‡PSYC 3073, or †‡PSYC 328V or General Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
16	Semester Hours
Spring Semester Year 3	
3	†‡PSYC course from Group A or B, Major Elective, or PSYC 328V
3	†Core from area g (if still needed) or †Advanced Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
16	Semester Hours
Fall Semester Year 4	
3	†‡PSYC course from Group A or B or †‡ PSYC 328V/4283 (as needed)
3	†‡PSYC course from Group A or B (if needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	†Advanced Level Elective
1	General Elective
16	Semester Hours
Spring Semester Year 4	
3	†‡PSYC 3000-4000 Level Elective or †‡PSYC 328V/4283 (as needed)
3	†‡PSYC 3000-4000 Level Elective or †‡PSYC 328V/4283 (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	†Advanced Level Elective
3	General Elective
15	Semester Hours
124	Total Hours

† Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter  
 ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

- Group A:** Six hours required  
 PSYC 3013 Social Psychology  
 PSYC 3023 Abnormal Psychology  
 PSYC 3093 Developmental Psychology  
 PSYC 4063 Psychology of Personality  
 PSYC 4053 Psychological Tests
- Group B:** Six hours required  
 PSYC 3103 Cognitive Psychology  
 PSYC 4073 Psychology of Learning  
 PSYC 4123 Perception  
 PSYC 4143 History and Systems of Psychology

PSYC 4183 Physiological Psychology  
 PSYC 4193 Comparative Psychology  
 PSYC Capstone Courses: Three hours required with a grade of “C” or higher.  
 PSYC 328V Advanced Research  
 PSYC 4283 Advanced Seminar

**Requirements for a Minor in Psychology:** Minimum of 18 hours including PSYC 2003, PSYC 2013, and PSYC 3073. A maximum of three hours of PSYC 206V and/or PSYC 207V can be counted toward meeting the minor requirement. A grade of “C” or better is required in all psychology courses used to satisfy the 18 hours of the minor. In addition, a 2.00 cumulative grade-point average is required on all work completed in the Department of Psychology. A student must notify the department of his or her intent to minor.

**Psychology (B.A.) Teacher Licensure in Social Studies Requirements:**

Please refer to the Secondary Education Requirements for Fulbright College Students on page 118.

Students wanting to teach social studies in middle school should consult with a middle level adviser in the College of Education and Health Professions.

For requirements for advanced degrees in psychology, see the *Graduate School Catalog*.

SEE PAGE 383 FOR PSYCHOLOGY (PSYC) COURSES

**RELIGIOUS STUDIES (RLST)**

Sidney Burris  
 Chair of Studies  
 517 Old Main  
 479-575-2509

- Professors Engels, King, Levine, Montgomery, Schneider, Spellman, Tsai
- Associate Professors Adler, Chappell, Coon, D’Alisera, Finlay, Ghadibian, Senor, Tucker, Worden
- Assistant Professors Erickson, Schweiger

Drawing on faculty from the humanities and social sciences, this minor introduces students to the interdisciplinary and comparative study of religion.

**Program Requirements:** Students must complete 15 credit hours of regular courses listed below or special topics and seminars found in each semester’s Schedule of Classes under Religious Studies. Of these 15 hours, 3 hours must include HUMN 2213 World Religions. Students also must choose ONE of the following gateway options:

ANTH 3123 Anthropology of Religion  
 PHIL 4303 Philosophy of Religion

A maximum of six hours may be presented from courses taken in the student’s major department.

ANTH 3123 The Anthropology of Religion  
 ANTH 3213 Indians of North America  
 ANTH 3263 Indians of Arkansas and the South  
 ANTH 4513 African Religions: Gods, Witches, Ancestors  
 CLST 4003H “Greek Religion” or “Greek Sacred Space” or “Roman Religions”  
 ENGL 3623 The Bible as Literature  
 GREK 2003 Greek New Testament  
 HIST 3003 History of Christianity  
 HIST 3033 Islamic Civilization  
 HIST 3083 Women and Christianity  
 HIST 3263 History of the American Indian  
 HIST 3923H Honors Colloquium: Sufism

HIST 3923H Honors Colloquium: Honors Approaches to Religious Studies  
 HIST 4043 Late Antiquity and the Early Middle Ages  
 HIST 4053 Late Middle Ages  
 HIST 4073 Renaissance and Reformation Europe  
 HIST 4313 History of China to 1644  
 HIST 4353 Middle East 600-1250  
 HIST 4373 Mongol & Mamluk Middle East 1250-1520  
 HIST 4393 The Ottoman Empire and Iran 1300-1722  
 HIST 4533 American Social and Intellectual History to 1865  
 HUMN 2213 Intro. to World Religions  
 HUMN 3003 Religions of Asia  
 HUMN 3163 On Death and Dying  
 HUMN 3923H “Thomas Merton” or “St. Peter’s and the Vatican”  
 HUMN 425V Colloquium: Hebrew Bible in Translation  
 PHIL 4013 Platonism and Origin of Christian Theology  
 PHIL 4023 Medieval Philosophy  
 PHIL 4303 Philosophy of Religion  
 PLSC 4593 Islam and Politics  
 SOCI 3103 Religion and Society  
 WLIT 3983 Quran and Mid Eastern Literature

**RUSSIAN STUDIES (RSST)**

Donald R. Kelley  
 Chair of Studies  
 428 Old Main  
 479-575-2006

- Professors Kelley (political science), Gay (economics), Tucker (foreign languages)
- Assistant Professors Ferrier (economics), Starks (history)

The Russian studies program focuses on the pre-Revolutionary period prior to 1917, on the communist period from 1917 to 1991, and on the post-communist period from 1991 onward. The geographic focus includes Russia, the other successor states that have emerged from the breakup of the Soviet Union, and East Europe.

Students wishing to maximize their knowledge of Russia and the other successor states and wishing to prepare for graduate training and/or employment in the private sector or government in positions related to the area may earn a combined major in Russian studies together with their major in another discipline. Students are required to coordinate their academic programs both with their advisers in the major department and with the Chairman of the Russian studies program. New students entering the program are required to notify both the major adviser and the chairman of studies of their intention to participate. Freshmen and sophomores considering this program are advised to begin their study of Russian as early as possible.

**Language Requirement:** The student must complete the equivalent of a third year of Russian language training such as RUSS 3013 and RUSS 3023. Students are strongly encouraged to obtain at least a portion of this training in an intensive summer or semester program which provides concentrated instruction beyond the conventional class experience.

**Russian Studies Colloquium:** The student must complete at least three hours in the Russian Studies Colloquium (RSST 4003). The Colloquium may be repeated with a change of subject for a maximum of six credits, with the three additional credits counted as non-departmental electives within the program.

**Electives:** The student must complete at least 18 hours in addition to

the language requirement and the Colloquium, in courses with specific content related to Russian studies, or in individualized courses under faculty participating in the program. Students choosing to take individualized reading or directed research courses as a part of the RSST program must obtain the approval of the chairman of studies and their major adviser.

The following conditions apply to the selection of Russian studies electives:

1. courses must be selected from at least three separate departments;
2. a maximum of nine hours may be submitted from courses taken in any one department; and
3. a maximum of nine hours may be submitted from courses taken in the student's major department.

The following courses may be taken in fulfillment of elective requirements:

#### Foreign Language

RUSS 4123 Survey of Russian Literature from its Beginnings to the 1917 Revolution

RUSS 4133 Survey of Russian Literature

RUSS 475V Special Investigations

#### History

HIST 4283 Russia to 1861

HIST 4293 Russia Since 1861

#### Political Science

PLSC 394V Readings in Political Science

PLSC 4513 Creating Democracies

PLSC 4563 Government & Politics of Russia

PLSC 4813 Politics of the Cold War

SEE PAGE 385 FOR RUSSIAN STUDIES (RSST) COURSES

## SOCIAL WORK, SCHOOL OF (SCWK)

Marcia A. Shobe

Director of the School of Social Work

Melody Greer

Undergraduate Program Coordinator

Glenda House

Graduate Program Coordinator

106 ASUP

479-575-5039

<http://socialwork.uark.edu/>

- Professor Schriver
- Professor Emeritus King
- Associate Professors Christy-McMullin, DeCoster, Shobe
- Associate Professor Emerita McGettrick
- Assistant Professors Ferguson, Stauss
- Research Associate Professor Hurd
- Clinical Associate Professor Greer
- Clinical Assistant Professor Allen

The social work program is fully accredited at the baccalaureate level by the Council on Social Work Education. The principal objective of the social work program is to prepare students for beginning generalist social work practice. Contact the undergraduate coordinator for admission and retention requirements.

**Requirements for a Major in Social Work:** 45 semester hours of social work courses including:

SCWK 2133 Intro. to Social Work

SCWK 3193 Human Diversity and Social Work

SCWK 4073 Social Work Research and Technology I

SCWK 4093 Human Behavior and the Social Environment I

SCWK 4103 Human Behavior and the Social Environment II

SCWK 4153 Social Welfare Policy

SCWK 4333 Social Work Practice I

SCWK 4343 Social Work Practice II

SCWK 4412 Field Seminar I

SCWK 4422 Field Seminar II

SCWK 4434 Social Work Internship I

SCWK 4444 Social Work Internship II

SCWK 4733 Social Work Practice III

Social Work electives – 6 hours

Students must adhere to requirements cited for each social work course. A grade of “C” or better must be earned in all core social work courses. If a student receives a grade of “D” in a core social work course, the course must be retaken with a grade of “C” or better prior to taking the course for which that course serves as a prerequisite.

The following social science and general education courses are also required as part of the social work curriculum:

PLSC 2003 American National Government

SOCI 2013 General Sociology

BIOL 1543/1541L Principles of Biology or ANTH 1013/1011L Introduction to Biological Anthropology and Lab

COMM 1313 Fundamentals of Communication

PSYC 2003 General Psychology

Statistics course, 3 hours

In addition, six hours of upper-level (3000-4000) social science electives, to be selected from SOCI, PSYC, ANTH, GNST, PLSC, COMM, GEOS, AAST, or HESC complete the degree requirements.

**Writing Requirement:** Social work students complete the research/analytical writing requirement by submitting the research paper from SCWK 4073 or honors paper to the social work faculty for approval.

**Requirements for Departmental Honors in Social Work:** The Departmental Honors Program in Social Work is an upper-division course of study with an independent investigation on a topic in social work. Students work closely with an adviser of their choice to define the goals of an honors project and to develop it to completion. They must take 12 hours (which may include 6 hours of thesis) in Honors Studies. In developing the project, students are encouraged to take honors courses, participate in honors colloquia, and do extensive background reading. The honors thesis may entail a library research project, a social work intervention project to be conducted in the field, or a policy analysis project. A research study that requires original data collection and analysis is preferred. In any case, the honors work is a serious long-term undertaking that should have direct value in supplementing the student's regular departmental academic program. Enrollment in SCWK 399VH takes place after the student has done background reading and has actually begun a project. Students normally enroll in this course for three hours of credit. The course may be repeated for an additional 3 hours of credit if the student's project is an extensive one. Regardless of the type of project, it is presented in written form and defended at an oral examination before an Honors Council Committee. Projects of extraordinarily high quality may be designated High Honors by the Committee. Successful completion of the requirements will be recognized by the award of the distinction “Social Work Scholar *Cum*

*Laudé*” at graduation. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate’s program of honors studies.

**Social Work Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.S.W. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-4	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
3	PLSC 2003 or PSYC 2003 or SOCI 2013
3	Core from areas a, b, c or d (as needed)
3	Core from areas a, b, c or d (as needed)
<b>15-16</b>	<b>Total Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3-4	†MATH 2043, 2053, 2183, 2554 or Core from areas a, b, c or d (as needed)
4	BIOL 1543/1541L or Core from area f (as needed)
3	PLSC 2003 or PSYC 2003 or SOCI 2013
3	Core from areas a, b, c or d (as needed)
<b>16-17</b>	<b>Total Hours</b>
Fall Semester Year 2	
3	PLSC 2003 or PSYC 2003 or SOCI 2013
4	BIOL 1543/1541L or Core from area f (as needed)
3	Core from areas a, b, c or d (as needed)
3	Core from areas a, b, c or d (as needed)
3	Core from areas a, b, c or d (as needed)
<b>16</b>	<b>Total Hours</b>
Spring Semester Year 2	
3	†Core from area g or †Advanced Level Elective
3	†SCWK 2133 Introduction to Social Work
3	‡‡SCWK 3193 Human Diversity
3-4	Statistics (SOCI, PSYC, STAT, etc) (4 Hours if SOCI)
3	Core from areas a, b, c or d (as needed)
<b>15-16</b>	<b>Total Hours</b>
Fall Semester Year 3	
3	‡‡SCWK 4093 Human Behavior and Social Environment I
3	‡‡SCWK 4153 Social Welfare Policy
3	‡‡SCWK 4073 Social Work Research and Technology
3	Core from areas a, b, c or d (as needed)
3	Core from areas a, b, c or d (as needed)
<b>15</b>	<b>Total Hours</b>
Spring Semester Year 3	
3	‡‡SCWK 4333 Social Work Practice I
3	‡‡SCWK 4343 Social Work Practice II
3	‡‡SCWK 4103 Human Behavior and Social Environment II
3	‡‡Upper level social science*
4	Core from area f (as needed)
<b>16</b>	<b>Total Hours</b>
Fall Semester Year 4	
3	Core from areas a, b, c or d (as needed)
3	‡‡SCWK 4733 Social Work Practice III
4	‡‡SCWK 4434 Field Experience / Social Work Internship I
2	‡‡SCWK 4412 Field Seminar I
3	‡‡SCWK upper level Elective
<b>15</b>	<b>Total Hours</b>

Spring Semester Year 4	
4	‡‡SCWK 4444 Field Experience / Social Work Internship II
2	‡‡SCWK 4422 Field Seminar II
3	‡‡SCWK upper level elective
3	‡‡Upper level social science*
3	Core from areas a, b, c or d (as needed)
3	Core from areas a, b, c or d (if needed)
<b>15-18</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.
- \* 3000-4000 level social science electives to be selected from Sociology, Psychology, Anthropology, Gender Studies, Political Science, Communications, Geosciences, African-American Studies, or Human Environmental Sciences.

**Requirements for a Minor in Social Work:** 18 hours including SCWK 2133, SCWK 3193, and SCWK 4153 (required) and any other nine hours of social work electives. A student must notify the department of his or her intent to minor. The social work minor is not preparation for social work practice and is not accredited by CSWE.

SEE PAGE 385 FOR SOCIAL WORK (SCWK) COURSES

**SOCIOLOGY AND CRIMINAL JUSTICE (SOCI)**

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- Distinguished Professor Smith
- University Professor Morgan
- University Professor Emeritus Ferritor
- Professors Fitzpatrick, Gaber, Schwab, Zajicek
- Professors Emeriti Mangold, Prassel, Rice
- Associate Professors Adams, Engen, Holyfield, Koski, Worden, Yang
- Associate Professor Emeritus Sieger
- Assistant Professors Bradley, Myrstol, Morimoto
- Visiting Assistant Professors Nalley, Shields
- Instructors Thompson

**Sociology (SOCI)**

A Bachelor of Arts (B.A.) degree in sociology is useful preparation not only for graduate work in sociology, but also for pre-professional training in other fields, such as medicine, law, human services, or related work in the government.

**Requirements for B.A. Degree with a Major in Sociology:** 31 semester hours, to include SOCI 2013, SOCI 3193, SOCI 3223, SOCI 3301L, SOCI 3303, SOCI 3313, SOCI 4023, SOCI 4043, and 9 hours from sociology 3000- and 4000-level electives.

**Writing Requirement:** To fulfill the Fulbright College writing requirement, each sociology major will submit, prior to graduation, a substantial research or analytical paper, with a grade of “A” or “B” from an upper-division sociology course (3000-, 4000-, or 5000-level) to their departmental adviser. Satisfactory completion of an honors project or a senior thesis may fulfill this requirement.

**Requirements for Departmental Honors in Sociology:** The Departmental Honors Program in Sociology is an upper-division course of study

based on independent investigation on a scholarly topic of sociological interest. To be eligible for sociology honors candidacy, students normally will have completed 28 semester hours and not more than 85 semester hours with a minimum cumulative grade-point average of 3.5. They must take 12 hours in Honors Studies, which may include 6 hours of thesis. In the junior year, three hours of directed reading, planning, or other work on a research problem should be selected from the following courses:

- SOCI 399VH Honors Course
- SOCI 403V Individual Study in Sociology
- SOCI 4043 Seminar in Sociology.

In the senior year, the student will complete an honors project for up to six hours of credit in SOCI 399VH Honors Course. This honors research project will normally consist of an empirical investigation but may, with the approval of the honors director and the other departmental representatives, be intensive library research on a topic. All candidates must pass an oral examination given by an Honors Council Committee. Successful completion of the requirements will be recognized by the award of the distinction “Sociology Scholar *Cum Laude*” at graduation. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate’s program of honors studies.

**Sociology Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-4	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
3	SOCI 2013 General Sociology or Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15</b>	<b>Total Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3-4	†MATH 2043, 2053, 2183, 2554 or Core from areas a, b, c, d or e (as needed)
3	SOCI 2013 General Sociology (if still needed) or Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
3	General Elective
<b>16</b>	<b>Total Hours</b>
Fall Semester Year 2	
4	‡†SOCI 3303 & 3301L Social Data Analysis and Lab
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	General Elective
<b>16</b>	<b>Total Hours</b>
Spring Semester Year 2	
3	†Core from area g (if needed) or †Advanced Level Elective
3	‡†SOCI 3313 Social Research
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	General Elective
<b>15</b>	<b>Total Hours</b>

Fall Semester Year 3	
3	‡†SOCI 3193 Race, Class, & Gender
3	‡†SOCI 3223 Social Psychology
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Total Hours</b>
Spring Semester Year 3	
3	‡†SOCI 4023 Social Theory
3	‡†SOCI Upper Level Elective
3	†Core from area g (if needed) or †Advanced Level Elective
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Total Hours</b>
Fall Semester Year 4	
3	‡†SOCI Upper Level Elective
3	‡†SOCI Upper Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	General Elective
<b>15</b>	<b>Total Hours</b>
Spring Semester Year 4	
3	‡†SOCI 4043 Seminar in Sociology
3	Core from areas a, b, c, d or e (as needed)
3	†Advanced Level Elective
3	†Advanced Level Elective
3	General Elective
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Requirements for a Minor in Sociology:** 19 semester hours in sociology to include SOCI 2013, SOCI 3301L, SOCI 3303, SOCI 3313, and at least nine hours of 3000-level classes or above. A student must notify the department of her or his intent to minor.

**Sociology (B.A.) Teacher Licensure in Social Studies Requirements:**

Please refer to the Secondary Education Requirements for Fulbright College Students on page 118.

Students wanting to teach social studies in middle school should consult with a middle level adviser in the College of Education and Health Professions.

**Combined Major in Anthropology/Sociology:** 36 hours with a minimum of 15 hours in each subject, to include SOCI 2013, SOCI 3303/3301L (or a course in statistics), SOCI 3313, and SOCI 4023 and ANTH 1013, ANTH 1011L, ANTH 1023, ANTH 3023/3021L, and ANTH 4013. Additional courses are to be selected in consultation with a representative of fields concerned.

For the eight-semester program plan for a combined major in Sociology and Anthropology, see the Anthropology entry on page 132.

For a combined major in sociology and African-American studies, see page 128.

For a major in criminal justice, see below.

For a major in social work, see page 192.

For requirements for an M.A. degree in sociology, see the *Graduate School Catalog*.

SEE PAGE 386 FOR SOCIOLOGY (SOCI) COURSES, See PAGE 330 FOR CRIMINAL JUSTICE (CMJS) COURSES

**Criminal Justice (CMJS)**

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The program in criminal justice is designed to prepare candidates for a variety of entry-level positions in criminal justice and to enable experienced personnel to expand their knowledge and skills. Drawing on a strong interdisciplinary base in the social sciences, the program provides education in the complexities of human behavior and problems of interpersonal relations in an increasingly urbanized America. The overall goal of the program is to enable men and women to contribute to the development and implementation of a fair and effective system of criminal justice.

**Requirements for the B.A. Degree with Major in Criminal Justice:** Minimum of 31 semester hours to include CMJS 2003, CMJS/SOCI 3023, SOCI/CMJS 3043, CMJS/SOCI 3203, SOCI 3301L, SOCI 3303, SOCI 3313, one course from CMJS 3003, CMJS 3503. Nine hours to complete the 31-semester-hour requirement from 3000- and 4000- level criminal justice or sociology courses not taken above.

For transfer students, a minimum of 18 hours of coursework in the major at the University of Arkansas is required.

**Writing Requirement:** To fulfill the Fulbright College writing requirement, each criminal justice major will submit, prior to graduation, a substantial research or analytical paper, with a grade of “A” or “B” from an upper-division criminal justice course (3000-, 4000-, or 5000-level) to their departmental adviser. Satisfactory completion of an honors project or a senior thesis may fulfill this requirement.

**Requirements for Departmental Honors in Criminal Justice:** The Departmental Honors Program in Criminal Justice is an upper-division course of study based on a topic in the area of criminal justice. To be eligible for criminal justice honors candidacy, students normally will have completed 28 semester hours and not more than 85 semester hours with a minimum cumulative grade-point average of 3.5. They must take 12 hours (which may include 6 hours of thesis) in Honors Studies. The honors project may be an intensive study of a topic in criminal justice or an empirical research investigation. The candidate is expected to pass an oral examination given by an Honors Council Committee. Projects of extraordinarily high quality may be designated High Honors by the Committee. Successful completion of the requirements will be recognized by the award of the distinction “Criminal Justice Scholar *Cum Laude*” at graduation. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate’s program of honors studies.

**Criminal Justice Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-4	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
3	SOCI 2013 General Sociology or Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>15-16</b>	<b>Semester Hours</b>

Spring Semester Year 1	
3	ENGL 1023 Composition II
3-4	†MATH 2043, 2053, 2183 or 2554 or Core from areas a, b, c, d or e (as needed)
3	SOCI 2013 General Sociology (if still needed) or Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16-17</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	CMJS 2003 Intro to CMJS
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	†Core from area g (if needed) or †Advanced Level Elective
3	‡‡CMJS 3043 The Police and Society
3	‡‡CMJS/SOCI 3023 Criminology
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 3	
4	‡‡SOCI 3303/3301L Social Data and Analysis/Lab
3	‡‡CMJS/SOCI 3203 Corrections
3	†Advanced Level Elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	‡‡ SOCI 3313 Social Research
3	‡‡CMJS 3003 Criminal Law and Society or ‡‡CMJS 3503 Criminal Procedures
3	Core from areas a, b, c, d or e (as needed)
3	†Core from area g (if still needed) or †Advanced Level Elective
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	‡‡CMJS/SOCI 3000-4000 elective
3	Core from areas a, b, c, d or e (as needed)
3	Core from areas a, b, c, d or e (as needed)
3	†Advanced Level Elective
3	General Elective
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	‡‡CMJS/SOCI 3000-4000 elective
3	‡‡CMJS/SOCI 3000-4000 elective
9	General Electives
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

† Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter  
 ‡‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

SEE PAGE 330 FOR CRIMINAL JUSTICE (CMJS) COURSES.

## WORLD LANGUAGES, LITERATURES, AND CULTURES (WLLC)

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- Professors Haydar (A.), Levine, Pritchett, Restrepo, Tucker, Williams
- Professors Emeriti Eichmann, Falke, Hanlin, Ricker
- Associate Professors Arenberg, Bell, Christiansen, Comfort, Condray, Davis, Fredrick, Fukushima, Jones, Ruiz, Turner
- Associate Professors Emeriti Hassel, Horton
- Assistant Professors Billings, Hoyer, Pappas, Rozier, Villalobos
- Instructors Haydar (P), Xu

The foreign language requirement among the basic courses is satisfied by successful completion of a course numbered 2013 for all B.A. degree candidates and of a course numbered 2003 for all B.S. and B.F.A. degree candidates, and 1013 for B.M. degree candidates. Students who, on the basis of prior knowledge of language, omit one or more courses in the basic language sequence (1013-2013) may receive college credit for omitted courses if they validate their higher placement by passing an advanced course with a grade of “C” or above. Credit will be awarded at the request of the student when filed by application to the Foreign Language Department office.

**Restrictions:** (a) Conversation courses (3033, 4033) and correspondence courses may not be used to validate such prior knowledge, (b) No degree credit (graduation credit) is awarded for a foreign language 1003 course to students in Fulbright College continuing the language begun in high school, either by validation or regular registration. Also, for Fulbright College students who do not present the Fulbright College admission requirement of two units (years) of a single modern foreign or classical language, the first semester of language study will be considered remedial and will not count towards the 124 hours required for graduation (although the course will appear as University credit and the grade received will be computed in the grade-point average). Students transferring from other institutions are expected to meet the same entrance standard.

### Requirements for a Major in a Foreign Language:

**French:** (University and college requirements for the Bachelor of Arts are found on pages 40 and 122.) 24 hours in French in courses numbered 3000 or above with a minimum grade of “C” in each course. Specific courses required are FREN 3003, FREN 3113, FREN 4003, FREN 4033, FREN 4213, and any two French literature courses at the 4000-level.

### French Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-4	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
3	FREN course from Group A
3	Core from areas a, b, d or e (as needed)
3	Core from areas a, b, d or e (as needed)
<b>15-16</b>	<b>Semester Hours</b>

Spring Semester Year 1	
3	ENGL 1023 Composition II
3-4	†MATH 2043, 2053, 2183 or 2554 or Core from areas a, b, d or e (as needed)
3	FREN course from Group A
3	Core from areas a, b, d or e (as needed)
4	Core from area f (as needed)
<b>16-17</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	FREN course from Group A or ‡FREN course from Group B
3	Core from areas a, b, d or e (as needed)
3	Core from areas a, b, d or e (as needed)
3	Core from areas a, b, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	FREN course from Group A or ‡FREN course from Group B
3	†Core from area g (if required) or †Advanced Level Elective
3	Core from areas a, b, d or e (as needed)
3	Core from areas a, b, d or e (as needed)
3	General Elective
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 3	
3	‡FREN course from Group B
3	‡FREN course from Group B or ‡FREN course from Group C
3	Core from areas a, b, d or e (as needed)
3	Core from areas a, b, d or e (as needed)
4	General Electives
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	‡FREN course from Group B or ‡FREN course from Group C
3	‡FREN course from Group C
3	†Core from area g (if required) or †Advanced Level Elective
3	Core from areas a, b, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	‡FREN course from Group C (as needed)
3	‡FREN course from Group C (as needed)
3	†Advanced Level Elective
3	General Elective
3	General Elective
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	‡FREN course from Group C (as needed) or General Elective
3	‡FREN course from Group C (as needed) or General Elective
3	†Advanced Level Elective
3	†Advanced Level Elective
3	General Elective
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Group A:** Courses to complete the basic language requirement, as needed.

- FREN 1003 Elementary French I
- FREN 1013 Elementary French II
- FREN 2003 Intermediate French I
- FREN 2013 Intermediate French II

**Group B:** Minimum 9 hours

Required courses:



FREN 3003 Advanced French  
 FREN 3113 Introduction to Literature  
 FREN 4003 Advanced Grammar

Electives:

FREN 3103 Cultural Readings  
 FREN 3033 French Conversation

**Group C:** Minimum 12 hours

Required courses:

FREN 4033 Oral Proficiency  
 FREN 4213 French Civilization

Two French Literature courses chosen from the following:

FREN 4113 Special Themes French Literature  
 FREN 4223 Survey of French Literature I  
 FREN 4233 Survey of French Literature II

Electives:

FREN 4333 Business French  
 FREN 4113 Special Themes French Literature  
 FREN 475V Special Investigations  
 FREN 4203 Quebec Studies

**German:** (University and college requirements for the Bachelor of Arts are found on pages 40 and 122.) 24 hours in German in courses numbered 3000 or above with a minimum grade of “C” in each course. Specific courses required are GERM 3003, GERM 3013, GERM 4003, GERM 4213, GERM 4223, three hours of conversation (GERM 3033 or GERM 4033), and six hours of literature.

**German Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 1200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-4	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
3	GERM course from Group A
3	Core from areas a, b, d or e (as needed)
3	Core from areas a, b, d or e (as needed)
<b>15-16</b>	<b>Total Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3	†MATH 2043, 2053, 2183 or Core from areas a, b, d or e (as needed)
3	GERM course from Group A
3	Core from areas a, b, c, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Total Hours</b>
Fall Semester Year 2	
3	GERM course from Group A or ‡GERM course from Group B
3	Core from areas a, b, d or e (as needed)
3	Core from areas a, b, d or e (as needed)
3	Core from areas a, b, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Total Hours</b>
Spring Semester Year 2	
3	†Core from area g (if required) or †Advanced Level Elective
3	GERM course from Group A or ‡GERM course from Group B

3	Core from areas a, b, d or e (as needed)
3	Core from areas a, b, d or e (as needed)
3	General Elective
<b>15</b>	<b>Total Hours</b>
Fall Semester Year 3	
3	‡GERM course from Group B
3	‡GERM course from Group B
3	Core from areas a, b, d or e (as needed)
3	Core from areas a, b, d or e (as needed)
4	General Electives
<b>16</b>	<b>Total Hours</b>
Spring Semester Year 3	
3	‡GERM course from Group B
3	‡GERM course from Group B (if needed) or ‡GERM course from Group C
3	Core from areas a, b, d or e (as needed)
4	Core from area f (as needed)
3	†Core from area g (if required) or †Advanced Level Elective
<b>16</b>	<b>Total Hours</b>
Fall Semester Year 4	
3	‡GERM course from Group B (if needed) or ‡GERM course from Group C
3	‡GERM course from Group C (as needed)
3	†Advanced Level Elective
6	General Electives
<b>15</b>	<b>Total Hours</b>
Spring Semester Year 4	
3	‡GERM course from Group C (as needed)
3	‡GERM course from Group C (as needed)
3	†Advanced Level Elective
3	†Advanced Level Elective
3	General Elective
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- ‡ Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Group A:** Courses to complete the basic language requirement, as needed.

GERM 1003 Elementary German I  
 GERM 1013 Elementary German II  
 GERM 2003 Intermediate German I  
 GERM 2013 Intermediate German II

**Group B:** Fifteen hours.

GERM 3003 Advanced German I (fall)  
 GERM 4003 Advanced German II (spring)  
 GERM 3013 Introduction to Literature (fall)  
 GERM 4213 German Civilization (spring)  
 GERM 3033 Conversation (spring)

**Group C:** Nine hours.

GERM 4033 Advanced Conversation  
 GERM 4143 German Lyric Poetry  
 GERM 4343 Business German II  
 GERM 4123 The German Novella  
 GERM 4223 German-Speaking Countries  
 GERM 470V Special Topics  
 GERM 4133 The German Drama  
 GERM 4333 Business German I  
 GERM 475V Special Investigations

**Spanish:** (University and college requirements for the Bachelor of Arts are found on pages 40 and 122.) 27 hours in Spanish in courses numbered 3000 or above with a minimum grade of “C” in each course. Specific courses required are SPAN 3003, SPAN 3033, SPAN 3103, SPAN 3113, and SPAN 4003. The remaining 12 hours are to be selected from among other 4000-level offerings, in consultation with the major adviser. Students considering future graduate work in Spanish are strongly advised to take both the Spanish and Latin American literature surveys (SPAN 4103 or 4113 and 4133).

**Spanish Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The following eight-semester plan refers to additional B.A. Core Requirement Areas (areas a, b, c, d, e, f, and g) found on page 200 at the end of this chapter. Core requirement hours may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute a three-hour (or more) general elective in place of a core area.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3-4	MATH 1203 (If required) or †MATH 2043, 2053, 2183 or 2554
3	SPAN course from Group A
3	Core from areas a, b, d or e (as needed)
3	Core from areas a, b, d or e (as needed)
<b>15-16</b>	<b>Total Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3-4	†MATH 2043, 2053, 2183 or 2554 or Core from areas a, b, d or e (as needed)
3	SPAN course from Group A
3	Core from areas a, b, d or e (as needed)
4	Core from area f (as needed)
<b>16-17</b>	<b>Total Hours</b>
Fall Semester Year 2	
3	SPAN course from Group A or ††Group B
3	Core from areas a, b, d or e (as needed)
3	Core from areas a, b, d or e (as needed)
3	Core from areas a, b, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Total Hours</b>
Spring Semester Year 2	
3	†Core from area g (if needed) or †Advanced Level Elective
3	††SPAN course from Group B
3	Core from areas a, b, d or e (as needed)
3	Core from areas a, b, d or e (as needed)
3	General Elective
<b>15</b>	<b>Total Hours</b>
Fall Semester Year 3	
3	††SPAN course from Group B
3	††SPAN course from Group B
3	Core from areas a, b, d or e (as needed)
3	Core from areas a, b, d or e (as needed)
4	General Electives
<b>16</b>	<b>Total Hours</b>
Spring Semester Year 3	
3	††SPAN course from Group B
3	††SPAN course from Group B (if needed) or ††Group C
3	†Core from area g (if needed) or †Advanced Level Elective
3	Core from areas a, b, d or e (as needed)
4	Core from area f (as needed)
<b>16</b>	<b>Total Hours</b>

Fall Semester Year 4	
3	††SPAN course from Group C (as needed)
3	††SPAN course from Group C (as needed)
3	†Advanced Level Elective
6	General Electives
<b>15</b>	<b>Total Hours</b>
Spring Semester Year 4	
3	††SPAN course from Group C (as needed)
3	††SPAN course from Group C (if needed) or †Advanced Level Elective
3	†Advanced Level Elective
6	General Electives
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

- † Meets 40-hour advanced credit hour requirement. See College Academic Regulations on page 122 of this chapter
- †† Meets 24-hour rule (24 hours of 3000-4000 level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations on page 122 of this chapter.

**Group A:** Courses to complete the basic language requirement, as needed.

- SPAN 1013 Elementary Spanish II
- SPAN 2003 Intermediate Spanish I
- SPAN 2013 Intermediate Spanish II

**Group B:** Fifteen hours (SPAN 3003 and 3103 must be completed before enrolling in SPAN 3113 and 4003.)

- SPAN 3003 Advanced Spanish
- SPAN 3033 Conversation and Composition
- SPAN 3103 Cultural Readings
- SPAN 3113 Introduction to Literature
- SPAN 4003 Advanced Grammar

**Group C:** Twelve hours required from the following:

- SPAN 4033 Advanced Conversation
- SPAN 4133 Survey of Spanish American Literature I
- SPAN 4223 Latin American Civilization
- SPAN 4103 Monuments of Spanish Literature I
- SPAN 4113 Monuments of Spanish Literature II
- SPAN 4213 Spanish Civilization
- SPAN 4243 Literature and Culture in Hispanic U.S.
- SPAN 4253 Latin American Cinema and Society
- SPAN 4333 Business Spanish I
- SPAN 4063 Spanish Linguistics
- SPAN 470V Special Topics
- SPAN 475V Special Investigations

**Writing Requirement:** The college writing requirement may be satisfied by a term paper or other written work submitted for an upper-division foreign language literature class approved by the chair of the department.

For majors in Greek and Latin, see Classical Studies.

**Requirements for a Minor in Foreign Languages:**

**Arabic:** 15 hours in courses numbered 3000 or above. Specific courses required are ARAB 3016, ARAB 4016, and ARAB 4023 or ARAB 4053.

**French:** 15 hours in courses numbered 3000 or above. Specific courses required are FREN 3003, FREN 3113, FREN 4003, and FREN 4033. In some cases, specific course requirements may be adjusted to the individual needs of the candidate with the permission of the French adviser.

**German:** 15 hours in courses numbered 3000 or above. Specific courses required are GERM 3003, GERM 4003, GERM 4213 and three hours of literature.

**Spanish:** 15 hours in courses numbered 3000 or above. Specific courses required are SPAN 3003, SPAN 3103, and SPAN 4003 with six additional hours selected in consultation with the Spanish adviser.

**Requirements for a Minor in Foreign Languages with a Business Orientation:**

**French:** Courses required are FREN 3003, FREN 3103, FREN 4003, FREN 4033, and FREN 4333.

**Spanish:** Courses required are SPAN 3003, SPAN 3033, SPAN 3103, SPAN 4003, and SPAN 4333. In some cases, specific course requirements may be adjusted to the individual needs of the candidate with the permission of the Spanish adviser.

**Japanese:** Courses required are JAPN 3003, JAPN 3013, JAPN 3033, and JAPN 4333. In addition to these four courses, students must choose one of the following elective courses: JAPN 3983 or JAPN 4313.

In some cases, elective courses may be adjusted to the individual needs of the candidate with the permission of the Japanese adviser.

For information on advanced degrees in foreign languages, see the *Graduate School Catalog*.

**Requirements for Honors in Foreign Languages:** The Honors Program in Foreign Languages gives students of high ability the opportunity to conduct independent research culminating in an honors thesis. In addition to satisfying general graduation requirements and all requirements for honors separately established by the Honors Council, candidates for honors in Foreign Languages must:

1. complete 12 hours of honors credit. One to six of these may be honors thesis hours; the remaining hours should be taken in disciplines chosen in consultation with the adviser;
2. complete an honors thesis in the major field, and pass an oral examination on the thesis conducted by an honors committee, as evidence of substantial individual research skills;
3. demonstrate superior competence in language, culture, and literature by achieving a GPA. of 3.5 in all upper-division courses submitted for the major.

Successful completion of these requirements will be recognized by the award of the distinction "Language Scholar Cum Laude." Higher degree distinctions are recommended only in truly exceptional cases and are based upon the whole of the candidate's program of honors studies.

**Foreign Language (B.A.) Teacher Licensure Requirements:**

Please refer to the Secondary Education Requirements for Fulbright College Students on page 118.

SEE PAGE 391 FOR WORLD LANGUAGES, LITERATURES, AND CULTURES (WLLC) COURSES; CHECK PAGE 309 FOR ALPHABETICAL LISTINGS OF SPECIFIC LANGUAGES.

<b>Additional Fulbright College B.A. and B.S.W. Core Requirement Areas</b>		
<b>Core Area</b>	<b>Hours</b>	<b>Courses</b>
a. Communication	3	COMM 1313 Fundamentals of Communication
b. US History/ American National Government and Western Civilization	9	<b>U.S. History/American National Government – 3 hours from:</b> HIST 2003 History of the American People to 1877 or HIST 2013 History of the American People from 1877 or PLSC 2003 American National Government* (*PLSC 2003 required for BSW Social Work Majors) <b>Western Civilization – 6 hours from:</b> HIST 1003 Institutions and Ideas of Western Civilization and HIST 1013 Institutions and Ideas of Western Civilization II or HIST 1113 World Civilizations I and HIST 1123 World Civilizations II
c. Foreign Language	Up to 12 hours (depending on placement)	Completion through the Intermediate II (2013) level in a single language (Includes course numbers 1003*, 1013, 2003, 2013) * 1003 is non-degree credit unless student completed two years in a single foreign language and takes 1003 in a different language. <b>Students under this plan must begin with a degree-credit course in foreign language.</b>
d. Fine Arts/ World Literature/ Philosophy	15	<b>Fine Arts – 6 hours from two areas:</b> ARCH 1003 Architecture Lecture or LARC 1003 Landscape Architecture ARHS 1003 Art History or ARTS 1003 Art Studio (not core credit for art majors) COMM 1003 Film Lecture DANC 1003 Movement and Dance DRAM 1003 Theater Lecture (not core credit for drama majors) MLIT 1003 Music Lecture <b>World Literature – 6 hours to include:</b> WLIT 1113 World Literature I and either WLIT 1123 World Literature II OR a) a foreign language literature course b) any other WLIT course c) CLST 1003 Classical Studies: Greece or CLST 1013 Classical Studies: Rome <b>Philosophy – 3 hours from:</b> PHIL 2003 Introduction to Philosophy or PHIL 2103 Introduction to Ethics
e. Social Sciences	6	ANTH 1023 Introduction to Cultural Anthropology ECON 2013 Principles of Macroeconomics or ECON 2143 Basic Economics GEOG 2003 World Regional Geography PLSC 2013 Introduction to Comparative Politics PSYC 2003 General Psychology* SOCI 2013 General Sociology* or SOCI 2033 Social Problems (*PSYC 2003 and SOCI 2013 required for BSW Social Work Majors)
f. Natural Sciences	12 hours total with at least 4 hours of Biological Sciences and 4 hours of Physical Sciences	<b>Biological Sciences</b> ANTH 1011L/1013 Biological Anthropology* BIOL 1541L/1543 Principles of Biology* BIOL 1611L/1613 Plant Biology BIOL 2011L/2013 General Microbiology BIOL 1601L/1603 General Zoology (*ANTH 1011L/1013 or BIOL 1541L/1543 required for BSW Social Work Majors) <b>Physical Sciences</b> ASTR 2001L/2003 Survey of the Universe CHEM 1051L/1053 Chemistry in the Mod. World CHEM 1101L/1103 University Chemistry I and CHEM 1121L/1123 University Chemistry II GEOL 1111L/1113 General Geology and GEOL 1131L/1133 Environmental Geology PHYS 1021L/1023 Physics in Human Affairs PHYS 2011L/2013 College Physics I and PHYS 2031L/2033 College Physics II PHYS 2050L/2054 University Physics I PHYS 2070L/2074 University Physics II
g. Advanced Composition	3 hours - Exemption may be granted by either: a) grades of "A" or "B" in ENGL 1013 and "A" in ENGL 1023, both taken at UA or b) passing the Advanced Composition Exam* (Journalism majors must complete ENGL 2013)	ENGL 2003 Advanced Composition or ENGL 2013 Essay Writing ( <b>ENGL 2013 is required for all journalism majors</b> ) *(Students must satisfy the ENGL 1013 and 1023 requirement and complete 30 credit hours before taking the Advanced Composition Exam. The exam must be taken before the student has completed 96 credit hours. Students who do not pass the Advanced Composition Exam must take ENGL 2003.)

<b>Additional Fulbright College B.F.A. Core Requirement Areas</b>		
<b>Core Area</b>	<b>Hours</b>	<b>Courses</b>
a. Communication/ Philosophy/ Foreign Language	3	COMM 1313 Fundamentals of Communication (required for art education) OR PHIL 2203 Introduction to Logic OR An additional foreign language
b. US History/ American National Government and Western Civilization	9	<b>U.S. History/American National Government – 3 hours from:</b> HIST 2003 History of the American People to 1877 or HIST 2013 History of the American People from 1877 or PLSC 2003 American National Government <b>Western Civilization – 6 hours from:</b> HIST 1003 Institutions and Ideas of Western Civilization and HIST 1013 Institutions and Ideas of Western Civilization II OR HIST 1113 World Civilizations I and HIST 1123 World Civilizations II
c. Foreign Language	Up to 9 hours (depending on placement)	Completion through the Intermediate I (2003) level in a single language (includes course numbers 1003*, 1013, 2003) * 1003 is non-degree credit unless student completed two years in a single foreign language and takes 1003 in a different language. <b>Students under this plan must begin with a degree-credit course in foreign language.</b>
d. World Literature	6	WLIT 1113 World Literature I WLIT 1123 World Literature II
e. Social Sciences	3	ANTH 1023 Introduction to Cultural Anthropology ECON 2013 Principals of Macroeconomics ECON 2143 Basic Economics GEOG 2003 World Regional Geography PSYC 2003 General Psychology (required for art education) SOC1 2013 General Sociology SOC1 2033 Social Problems
f. Natural Sciences	8 hours with 4 hours of Biological Sciences and 4 hours of Physical Sciences	<b>Biological Sciences</b> ANTH 1011L/1013 Biological Anthropology BIOL 1541L/1543 Principles of Biology BIOL 1611L/1613 Plant Biology BIOL 1601L/1603 General Zoology <b>Physical Sciences</b> ASTR 2001L/2003 Survey of the Universe CHEM 1051L/1053 Chemistry in the Mod. World GEOL 1111L/1113 General Geology PHYS 1021L/1023 Physics in Human Affairs
g. Advanced Composition	3 hours - Exemption may be granted by either: a) grades of "A" or "B" in ENGL 1013 and "A" in ENGL 1023, both taken at UA or b) passing the Advanced Composition Exam*	ENGL 2003 Advanced Composition or ENGL 2013 Essay Writing *(Students must satisfy the ENGL 1013 and 1023 requirement and complete 30 credit hours before taking the Advanced Composition Exam. The exam must be taken before the student has completed 96 credit hours. Students who do not pass the Advanced Composition Exam must take ENGL 2003.)

<b>Additional Fulbright College B.M. Core Requirement Areas</b>		
<b>Core Area</b>	<b>Hours</b>	<b>Courses</b>
a. US History/ American National Government and Western Civilization	9	<b>U.S. History/American National Government- 3 hours from:</b> HIST 2003 History of the American People to 1877 or HIST 2013 History of the American People from 1877 or PLSC 2003 American National Government <b>Western Civilization – 6 hours from:</b> HIST 1003 Institutions and Ideas of Western Civilization and HIST 1013 Institutions and Ideas of Western Civilization II OR HIST 1113 World Civilizations I and HIST 1123 World Civilizations II
b. Foreign Language	Up to 6 hours (depending on placement)	Completion through the Elementary II (1013) level in a single language (Includes course numbers 1003* and 1013) * 1003 is non-degree credit unless student completed two years in a single foreign lan- guage and takes 1003 in a different language. <b>Students under this plan must begin with a degree-credit course in foreign language.</b>
c. Fine Arts/ World Literature	6	MLIT 1003 Music Lecture WLIT 1113 World Literature
d. Social Sciences	3	ANTH 1023 Introduction to Cultural Anthropology ECON 2013 Principals of Macroeconomics ECON 2143 Basic Economics GEOG 2003 World Regional Geography <b>PSYC 2003 General Psychology (Required for Music Education)</b> SOCI 2013 General Sociology SOCI 2033 Social Problems
e. Natural Sciences	8 hours with 4 hours of Biological Sciences and 4 hours of Physical Sciences	<b>Biological Sciences</b> ANTH 1011L/1013 Biological Anthropology BIOL 1541L/1543 Principles of Biology BIOL 1611L/1613 Plant Biology BIOL 2011L/2013 General Microbiology BIOL 1601L/1603 General Zoology <b>Physical Sciences</b> ASTR 2001L/2003 Survey of the Universe CHEM 1051L/1053 Chemistry in the Mod. World CHEM 1101L/1103 University Chemistry I CHEM 1121L/1123 University Chemistry II GEOL 1111L/1113 General Geology GEOL 1131L/1133 Environmental Geology PHYS 1021L/1023 Physics in Human Affairs PHYS 2011L/2013 College Physics I PHYS 2031L/2033 College Physics II PHYS 2050L/2054 University Physics I PHYS 2070L/2074 University Physics II
f. Advanced Composition	3 hours - Exemption may be grant- ed by either: a) grades of "A" or "B" in ENGL 1013 and "A" in ENGL 1023, both taken at UA or b) pass- ing the Advanced Composition Exam*	ENGL 2003 Advanced Composition or ENGL 2013 Essay Writing *(Students must satisfy the ENGL 1013 and 1023 requirement and complete 30 credit hours before taking the Advanced Composition Exam. The exam must be taken before the stu- dent has completed 96 credit hours. Students who do not pass the Advanced Composition Exam must take ENGL 2003.)

<b>Additional Fulbright College B.S. Core Requirement Areas</b>		
<b>Core Area</b>	<b>Hours</b>	<b>Courses</b>
a. US History/ American National Government and Western Civilization	9	<p><b>U.S. History/American National Government- 3 hours from:</b>                      HIST 2003 History of the American People to 1877 or HIST 2013 History of the American People from 1877 or                      PLSC 2003 American National Government</p> <p><b>Western Civilization – 6 hours from:</b>                      HIST 1003 Institutions and Ideas of Western Civilization and HIST 1013 Institutions and Ideas of Western Civilization II                      OR HIST 1113 World Civilizations I and HIST 1123 World Civilizations II</p>
b. Foreign Language	Up to 9 hours (depending on placement)	<p>Completion through the Intermediate I (2003) level in a single language (Includes course numbers 1003*, 1013, 2003)                      * 1003 is non-degree credit unless student completed two years in a single foreign language and takes 1003 in a different language. <b>Students under this plan must begin with a degree-credit course in foreign language.</b></p>
c. Fine Arts/ World Literature/ Philosophy	9 hours total selected from at least 2 different areas	<p><b>Fine Arts:</b>                      ARCH 1003 Architecture Lecture or LARC 1003 Landscape Architecture                      ARHS 1003 Art History or ARTS 1003 Art Studio                      COMM 1003 Film Lecture                      DANC 1003 Movement and Dance                      DRAM 1003 Theater Lecture                      MLIT 1003 Music Lecture</p> <p><b>World Literature:</b>                      WLIT 1113 World Literature I                      WLIT 1123 World Literature II OR                      a) a foreign language literature course                      b) any other WLIT course</p> <p><b>Philosophy:</b>                      PHIL 2003 Introduction to Philosophy                      PHIL 2103 Introduction to Ethics                      PHIL 2203 Introduction to Logic</p>
d. Natural Sciences	Determined by the department of the major	
e. Social Sciences	3	ANTH 1023 Introduction to Cultural Anthropology ECON 2013 Principles of Macroeconomics or ECON 2143 Basic Economics GEOG 2003 World Regional Geography PSYC 2003 General Psychology SOCI 2013 General Sociology
f. Advanced Composition	3 hours - Exemption may be granted by either: a) grades of "A" or "B" in ENGL 1013 and "A" in ENGL 1023, both taken at UA or b) passing the Advanced Composition Exam*	ENGL 2003 Advanced Composition or ENGL 2013 Essay Writing *(Students must satisfy the ENGL 1013 and 1023 requirement and complete 30 credit hours before taking the Advanced Composition Exam. The exam must be taken before the student has completed 96 credit hours. Students who do not pass the Advanced Composition Exam must take ENGL 2003.)

# Sam M. Walton College of Business

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## Office of the Dean of the College

301 Business Building, 479-575-5949

### Dean

Dan L. Worrell

### Senior Associate Dean for Academic Programs and Research

William P. Curington

### Senior Assistant Dean for Finance and Administration

David G. Hyatt

### Assistant Dean for Undergraduate Programs

Karen M. Boston

### Assistant Dean for Graduate Programs

Marion M. Dunagan

### Undergraduate Programs Office

328 Business Building, 479-575-4622

### Graduate School of Business

475 Walker Hall, 479-575-2851

### World Wide Web

<http://waltoncollege.uark.edu/>

### E-mail

[connect@walton.uark.edu](mailto:connect@walton.uark.edu)

**Research** Discover and disseminate knowledge through our research to support excellence and innovation in organizations; and

**Service** Share our business expertise in support of our state, our professions, and the academic community.

## FACILITIES AND RESOURCES

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The Walton College offers degree programs for undergraduate students and for graduate students at both the master's and doctoral levels.

The Walton College is housed in four modern buildings supporting on-campus programs. These attractive facilities provide technology-equipped classrooms and eight state-of-the-art computer laboratories for both for business classes and individual use. The buildings also house faculty and administrative offices, an honors program study area with computer access, the Walton College Career Center, and a large study room equipped for individual as well as group studying.

The library of the college is part of the general University Libraries and is housed in Mullins Library. The business and economics collection comprises approximately 55,000 volumes and makes this library one of the best in the region.

Walton College also operates centers for research, outreach, and public service. Information about these centers may be found in the University Centers and Research Units section of this catalog. Walton College centers include the following:

- Arkansas Household Research Panel
- Applied Sustainability Center
- Bessie B. Moore Center for Economic Education
- Center for Business and Economic Research
- Center for Management and Executive Education
- Center for Retailing Excellence
- Garrison Financial Institute
- Information Technology Research Center
- Supply Chain Management Research Center
- Small Business Development Center

## MISSION AND OBJECTIVES

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### Vision Statement

The Sam M. Walton College of Business is a nationally competitive business school that connects people with organizations and scholarship with practice by combining excellent student learning experiences with quality research serving Arkansas and the world.

### Core Values

**Excellence:** We strive for excellence in all we do.

**Professionalism:** We believe organizational practices must be built on an ethical foundation and high standards of professional behavior.

**Innovation:** We value creativity, innovation, and entrepreneurial spirit.

**Collegiality:** We believe in working together to examine situations and ideas from diverse perspectives.

### Mission Statement

The Walton College, the flagship business school of the state of Arkansas, has a three-fold mission:

**Teaching** Educate a diverse population of students in bachelor's, master's, and doctoral programs to be tomorrow's business, community, and academic leaders;

## DEGREES OFFERED

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Undergraduate students may pursue curricula leading to one of the following degrees: Bachelor of Science in Business Administration (B.S.B.A.), Bachelor of Science in International Business (B.S.I.B.). In each of these degree programs, the pre-business requirements must be completed before students



may enroll in upper division business courses. Students in Walton College may pursue an academic minor in business or in the J. William Fulbright College of Arts and Sciences. Walton College also offers business minors for business and non-business students. Degree programs and minors are outlined on subsequent pages.

## MAJORS, CONCENTRATIONS, AND MINORS

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### Majors with Concentrations

Accounting  
 Economics  
     Business Economics  
     International Economics and Business  
 Finance  
     Banking  
     Financial Management/Investment  
     Insurance  
     Real Estate  
     Personal Financial Management  
 General Business  
 Information Systems  
 Management  
     Human Resource Management  
     Small Business and Entrepreneurship  
     Organizational Leadership  
 Marketing  
     Marketing Management  
     Retail Marketing  
 Transportation

### Minors

Accounting  
 Business Economics  
 Enterprise Resource Planning  
 Finance  
 Financial Economics  
 Information Systems  
 Management  
 Marketing  
 Transportation

## OTHER PROGRAMS

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### Cooperative Education

Cooperative education (co-op) is an academic program that enables students to gain degree-related experience prior to graduation. It is a planned, progressive educational strategy in which the student obtains work experience related to his or her academic major and career goals. Participating students earn academic credit for their work experiences and are always paid by their employers. Co-op students can maintain their status as full-time students while participating in the program, even if their co-op experience requires they spend a semester working full-time.

Walton College students are eligible for co-op credit if they have 1) completed the pre-business core and have obtained at least 60 hours of credit, 2) a cumulative grade-point average of 2.5 or better, and 3) a grade-point average of 2.5 or better for the last full-time term completed. Students may receive one hour of credit per semester for a job that requires 12-19 hours of work per week or two

hours of credit per semester for a job that requires 20 or more hours per week. A maximum of six hours of degree credit may be awarded as a junior- senior-level business elective. Full-time students who work 40 hours or more per week in internships approved by the co-op education academic coordinator are eligible for three hours of academic credit per semester, or per full summer, provided they have a minimum GPA of 2.75, as well as having received a GPA of at least 2.75 in the prior full-time semester.

Students may seek either to qualify a job they have found themselves for co-op credit, or they may seek an employment opportunity through the Walton College Career Center, WJWH 226. The employment opportunity may be either a full-time, off-campus work assignment that alternates with semesters spent on campus taking courses (an alternating co-op), or it may be a part-time job undertaken concurrently with course work (a parallel co-op). Once a student has been matched with an approved job, the co-op coordinator, the faculty co-op adviser, the student's work place supervisor, and the student work together to formulate career-related learning objectives for the coming semester of work. These objectives must be in writing and in to the cooperative education coordinator in order for a student to be registered for co-op. At the end of each semester of work, the student is required to submit a three- to ten-page paper (depending on credit hours to be received) that re-states the student's learning objectives for the semester and discusses how the job experience fulfilled the objectives. The student is also required to submit an employer evaluation form, and the work supervisor is asked to submit an evaluation of the student's work.

For information on participating in Walton College co-op program, a current listing of co-op opportunities, and phone numbers of people with whom you may discuss these opportunities, visit the Cooperative Education home page on the Web at <http://waltoncollege.uark.edu/coop/>.

## COLLEGE ADMISSION REQUIREMENTS

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All students admitted to the University of Arkansas, Fayetteville, are eligible for admission to the Sam M. Walton College of Business. Students will be required to follow the degree program requirements set forth in the catalog corresponding to the student's first semester in Walton College, not the first semester of enrollment at the University of Arkansas.

## COLLEGE SCHOLARSHIPS

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High school graduates who expect to enroll in Walton College are encouraged to apply for scholarships made available to freshmen by individuals, business firms, and organizations. Also available to freshmen, regardless of degree program, are freshmen academic scholarships. Current Walton College students may apply for both college and departmental scholarships beginning in January of each year for the following academic year. Information on these financial awards may be secured from the University Scholarship Office and the Walton College Undergraduate Programs Office.

## STUDENT ORGANIZATIONS

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In addition to the general university student organizations, Walton College Student Ambassadors, Study Abroad Ambassadors, and a Business Dean's Student Advisory Board, there are several college societies open to Walton College students. These include the following:

- Alpha Kappa Psi (business professional)
- American Marketing Association
- Association of Information Technology Professionals

- Beta Alpha Psi (accounting honorary and professional)
- Beta Gamma Sigma (business honorary)
- Economics Club
- Finance Club
- National Association of Black Accountants
- Omicron Delta Epsilon (economics honorary)
- Human Resource Management Association
- Transportation and Logistics Association

## COLLEGE ACADEMIC REGULATIONS

### Pre-Business Requirements

Students pursuing a degree in Walton College are classified as pre-business with an intended major until all pre-business requirements are fulfilled. The following policies apply to the pre-business program:

To be eligible to enroll in upper-division business courses in Walton College, a student must complete the Walton College computer competency requirement (WCOB 1120) and maintain at least a 2.50 (on a 4.00 scale) overall grade-point average (GPA) in addition to completing the 42 credit hours listed below of pre-business core courses (or their equivalents), also with at least a 2.50 GPA. Further, a student must complete all courses offered to meet this requirement with a grade of “C” or better or the requirement for graduation. The pre-business core courses are as follows:

- COMM 1313 Fundamentals of Communication
- ECON 2013 Principles of Macroeconomics
- ECON 2023 Principles of Microeconomics
- ENGL 1013 Composition I
- ENGL 1023 Composition II
- MATH 2043 Survey of Calculus
- MATH 2053 Finite Mathematics
- WCOB 1111 Freshman Business Connections
- WCOB 1012 Legal Environment of Business
- WCOB 1023 Business Foundations
- WCOB 1033 Data Analysis and Interpretation
- WCOB 2013 Markets and Consumers
- WCOB 2023 Production and Delivery of Goods and Services
- WCOB 2033 Acquiring and Managing Human Capital
- WCOB 2043 Acquiring and Managing Financial Resources

Students’ records will be evaluated each semester to determine whether a student should be moved to a major and have pre-business classification removed. After receiving notification that a student has been admitted into his or her major, the student is expected to arrange for a degree check by the Undergraduate Programs Office to ascertain remaining degree requirements.

### Registration in Junior/Senior-Level Walton College Courses

Walton College students must complete the pre-business requirements prior to enrollment in junior- or senior-level courses in Walton College.

Non-degree seeking students and students enrolled in other colleges are subject to the same course prerequisites as students within Walton College. Specific exceptions to this policy must be addressed to the associate dean for academic affairs in Walton College or his designee.

**Restrictions on General Education Electives:** Only six hours total of general education electives will be allowed in Physical Education Activity (PEAC) or Dance Education Activity (DEAC) courses.

### Transfer of Credit Policies

In addition to the University policies controlling the granting of credit for course work taken at other institutions, the following policies apply to

transfer work applied to any undergraduate business program:

1. Transfer students considering admission to pursue a major in Walton College must have completed the pre-business courses and requirements listed above and have a 2.50 (on a 4.00 scale) cumulative grade-point average in the pre-business courses and in his or her overall grade-point average. Transfer students will be classified as pre-business students until pre-business core requirements have been completed.
2. A pre-business and overall grade-point average for courses accepted for transfer by the University of Arkansas will be calculated and used to evaluate the completion of the pre-business requirements by students transferring courses from other institutions.
3. Unless exceptions are granted at the time of admission to the University of Arkansas, transfer courses accepted by the University will not be accepted by Walton College for degree purposes unless a grade of “C” or better has been earned in each of these courses. (See the Admission chapter.)
4. A transferred course cannot carry more degree hours than are available in a similar University of Arkansas course. For example, a four-hour principles of economics course transfers as three degree hours.
5. Business courses completed at the freshman or sophomore level at another institution will not count as equivalents of junior- or senior-level courses offered in Walton College (University of Arkansas), and no transfer credit shall be granted for any such course(s) in Walton College.
6. At least 50 percent of program requirements in business and economics must be taken in residence.
7. All courses within a student’s major and Business Strategy and Planning (WCOB 3016) must be taken in residence at the University of Arkansas, Fayetteville.
8. Junior- or senior-level core courses in business and economics may be transferred from a school accredited by AACSB International.
9. Junior- or senior-level core courses taken at a non-AACSB International-accredited, four-year institution must either be repeated or validated by procedures specified and approved by the assistant dean for undergraduate programs.
10. Junior- or senior-level electives in business and economics taken at a non-AACSB International-accredited, four-year institution may be accepted in transfer as junior/senior business electives.
11. Junior- or senior-level courses in business taken by correspondence at AACSB International or non-AACSB International institutions may not be accepted and transferred for degree credit unless the course is approved by the student’s department chair and the associate dean.
12. If a student takes courses with different names but with similar content at different institutions or in different colleges within the University of Arkansas, degree credit will be allowed for only one of the courses, for example, principles of economics and agricultural economics.
13. Courses taken at any higher education institution where the course content is remedial are not acceptable for degree credit.
14. The student should be prepared to submit course descriptions, syllabi, or other course-related information for transfer course work if there is any question as to whether Walton College will grant degree credit for such work.
15. Exceptions: All requests for, exceptions to, and variations from the rules, regulations, and requirements of Walton College and the university should be made in writing to the associate dean for academic affairs of Walton College or his designee. Consult the Undergraduate Programs Office in Walton College for these requests.

## Course Loads

The normal course load in Walton College is 15 to 17 hours per semester (and six hours per summer term). Students with a 2.75 grade-point average the previous semester may take a maximum of 18 hours. Seniors may take 18 to 19 hours, if required for graduation, during their final semester. Students on academic warning are limited to a maximum course load of 12 hours. University regulations on the number of hours allowed per semester are found in the Orientation and Registration section of this catalog.

## Foreign Language Concentration

An undergraduate B.S.B.A. degree-seeking student may elect to substitute 12 hours in a single upper-level foreign language for 12 to 15 of the 15 hours required in the junior-senior business elective block of courses for the degree requirements.

## Double Major

A student may elect to obtain a double major by completing all required courses for two majors in Walton College (but not in two concentrations within a single major). The minimum hour requirement for a double major is 138 degree credit hours to include all requirements for both majors. If there are courses common to both majors, the department chairs involved will agree upon and specify additional requirements in lieu of the common courses. The junior/senior business elective block is reduced by three hours; however, choice of the junior/senior business electives is restricted to no more than three total hours from each department that offers the two majors. Students who have elected to substitute a foreign language course of study for junior/senior business electives must complete 12 hours of junior/senior language courses.

The student must notify the Undergraduate Programs Office in Walton College of intent to pursue a double major. All requirements for double majors must be completed prior to awarding of a degree.

## Additional Bachelor's Degrees

Students seeking a second bachelor's degree must contact the Undergraduate Programs Office to ascertain specific requirements. Degree candidates must meet the university's general graduation requirements. The university requires that 1) the student take a minimum of 30 semester hours over the requirements for the first degree, and 2) the 30 hours cover a minimum of 36 weeks in residency at the Fayetteville campus. Walton College also requires that the student complete all courses in the pre-business and business core and the major and any additional business requirements (if some of these have been completed on the first degree, they are waived). It is recommended that any additional courses needed to finish the University's 30-hour requirement be junior or senior business electives. The second degree may be taken after the first is awarded, or both degrees may be awarded simultaneously after completion of all requirements for both.

## College Graduation Requirements

- 1. University Requirements.** Degree candidates must meet the following: the University's general entrance requirements, number of credit hours required in residence, and the "requirements for graduation," including the University Core American history, and English proficiency.
- 2. Hour Requirements.** Degree candidates must satisfactorily complete the total number of semester hours specified for the curriculum in courses approved for one of the majors outlined in the succeeding pages. No less than 50 percent of the total credits must be in approved subjects other than business.

**NOTE:** Not all courses offered by the University will be accepted for degree credit by Walton College. Courses falling into this category are ANTH 0003, PHSC 0003, ARSC 0013, ENGL 0003, and MATH

0003. Developmental courses are defined as 1) any course so designated by the university, and 2) any lower-division course taken after a higher-level course is taken. Credit will not be given for duplicate course work.

- 3. Grade Requirements.** Students must earn a grade of "C" or better in all pre-business core course requirements. Each student must have a 2.00 cumulative GPA in each of the following areas:
  - a. All work completed at the University of Arkansas.
  - b. All courses specifically designated for the major.
  - c. All required business core courses and required economics courses.

- 4. General Education Course Work.** A student's general education course work must satisfy University Core Requirements, additional college/program course-specific requirements, as well as these two area requirements:

- a. Social Issues, Multicultural Environment, and Demographic Diversity, and
- b. Micro and Macroeconomics. If a student has not satisfied these area requirements within the fine arts and/or social sciences areas of the university core, these area requirements must be satisfied through general education electives to allow students to complete degree requirements within the hours indicated above.

Courses that satisfy these area requirements are listed below. NOTE that many of these courses will also satisfy University Core Requirements. Where possible, a student should select courses that satisfy both requirements.

- a. Social Issues, Multicultural Environment, and Demographic Diversity
  - ANTH 1023 Intro. to Cultural Anthropology (Univ. core)
  - SOCI 2013 General Sociology (Univ. core)
  - SOCI 2033 Social Problems (Univ. core)
  - HIST 1003 Institutions and Ideas of Western Civilization (Univ. core) previously called WCIV 1003
  - HIST 1013 Institutions and Ideas of Western Civilization II (Univ. core) previously called WCIV 1013
  - GEOG 1123 Human Geography (Univ. core)
  - Any Foreign Language (Univ. core, if 2000-level or above, general education elective otherwise)
- b. Micro/Macro Economics
  - ECON 2013 Principles of Macroeconomics (business core)
  - ECON 2023 Principles of Microeconomics (business core)

- 5. Residency Requirements.** The senior year's curriculum (last 30 hours) in business must be taken in residence. In addition, the student's major requirements (or the degree equivalent) and WCOB 3016 must be completed in residence. Specifically required junior or senior courses in business or economics must be taken at the University of Arkansas or at an AACSB-accredited school. At least 50 percent of the total hours in business and economics must be taken in residence.
- 6. Correspondence Course Rules.** No more than 18 hours of course work taken by correspondence may apply toward a degree. These 18 hours may not include more than 12 hours of courses in economics or business.
- 7. Catalog/Curriculum Changes.** Business is a dynamic profession, and the college and department curricula are updated continuously to keep pace with changes in the business world. Students entering under this catalog will be required to comply with such curricular changes to earn their degree. The total number of hours required for the degree, however, may not be increased, and all work completed in accordance with this catalog prior to the curriculum change will be applied toward the student's degree requirements. Furthermore, courses incorporated into the curriculum at a level lower than the one the

student has completed are not required for that student unless there are specific prerequisites. Students entering under earlier catalogs are responsible for completing the graduation requirements as published in the catalog in effect when they entered the program. Students having interruptions of their academic programs that exceed two calendar years must complete the requirements published in the catalog in effect when they re-enter the program. Exceptions to the graduation requirements must be approved by the senior associate dean for academic programs and research or his designee and the appropriate department chair.

### Graduation with Honors

The bachelor's degree Summa Cum Laude (with highest honors), Magna Cum Laude (with high honors), or Cum Laude (with honors) may be conferred only upon those students who have successfully completed the Walton College Honors Program. Both Walton Scholars and Departmental Scholars are eligible for these designations. Students whose cumulative grade-point average place them in the top 10 percent of their graduating class but who have not completed the Honors Program are eligible for the designation "With Distinction" on their official transcript. Among those students completing the Honors Program, the designations Summa Cum Laude, Magna Cum Laude and Cum Laude shall be determined as follows:

- Top 20 percent of students completing the Honors Program:  
Summa Cum Laude
- Next 30 percent of students completing the Honors Program:  
Magna Cum Laude
- Next 50 percent of students completing the Honors Program:  
Cum Laude

No honors degree will be conferred upon a candidate who has not completed at least 50 percent of his or her degree work at the University of Arkansas or who, in the last four semesters of attendance, has a cumulative grade-point average of less than 3.00 or has received a "D" or "F" in any course in the last semester. Certain other requirements will be outlined on request by the dean of the College.

### EIGHT-SEMESTER DEGREE PROGRAM POLICY

The Walton College offers an eight-semester degree-completion program. In each of the majors listed in this chapter, at least one eight-semester schedule is shown. Some majors offer several concentrations, and eight-semester programs are available for each of the concentrations in Section Two of the Catalog of Studies, online at <http://catalogofstudies.uark.edu>.

See also page 42 in the Academic Regulations chapter for information about the University's degree-completion program.

### HONORS PROGRAM

Walton College honors program consists of two components: the four-year Walton Scholars Program and the Departmental Scholars Program. Students participating in the honors program will be eligible to graduate Cum Laude, Magna Cum Laude, or Summa Cum Laude. Students who do not participate in the honors program are eligible to graduate with distinction, a classification separate from the Cum Laude awards. Honors program students will receive priority for participation in the Arkansas Cooperative Education Program, SAKE, the portfolio management class, and financial support for study-abroad programs. They also have access to an honors study area.

#### Eligibility for the Honors Program

Admission will be offered to incoming freshmen with an ACT of 28 or

higher and a high school GPA of 3.75. Students are required to maintain a cumulative GPA of 3.50 to remain in the program.

#### Requirements for Walton Scholars Program:

1. Complete 17 of 35 University Core hours in honors courses to be selected from the University Core or from 1000- or 2000-level WCOB core courses (excluding WCOB 1111H). MATH 2554 and MATH 2564 also count toward this requirement.
2. Demonstrate proficiency in a foreign language. This requires 0 to 12 hours of course work. Students may demonstrate proficiency by completing the 2013-level course in any foreign language.
3. Complete nine credit hours of honors courses in Walton College to include the following:
  - a. One three-hour college colloquium. This is an interdisciplinary course with topics appealing to a wide range of majors. The subject matter changes annually and is targeted to juniors.
  - b. One three-hour departmental colloquium: Each department will offer one departmental colloquium each year. It is designed for seniors.
  - c. Students are required to complete the departmental colloquium in their major department. Students majoring in more than one area of study may elect to choose the departmental colloquium in either major department.
  - d. A three-hour thesis: The thesis is a major independent writing project and arises from an international study experience, an internship, or working with a professor on research.
4. Complete an alternate honors capstone course WCOB 3016H, Business Strategy and Planning.

#### Requirements for the Departmental Scholars program:

1. Complete nine hours of honors courses to be selected from the University Core or from 1000- or 2000-level WCOB core courses (excluding WCOB 1111H) and demonstrate proficiency in a foreign language by completing a 2003 course in any foreign language.
2. Complete nine hours of honors courses in Walton College to include:
  - a. One three-hour college colloquium
  - b. One three-hour departmental colloquium. Students are required to complete the departmental colloquium in their major department. Students majoring in more than one area of study may elect to choose the departmental colloquium in either major department.
  - c. A three-hour thesis.

### DEGREE REQUIREMENTS

#### Bachelor of Science in Business Administration (B.S.B.A.)

The Bachelor of Science in Business Administration degree is offered through an educational program in the business and organizational disciplines intended to prepare individuals to make sustained contributions to organizations and society in a global, diverse, and dynamic environment. To achieve this objective the curriculum focuses on developing an individual's interdisciplinary problem-solving skills, interpersonal and communication skills, ability to adapt to changing technology, spirit of entrepreneurial innovation, and ethical and professional values.

Walton College offers work in the following eight majors for the B.S.B.A. degree. Some majors have concentrations to allow additional specialization.

1. Accounting (ACCT)
2. Business Economics (BECO)
  - a. Concentration I – Business Economics
  - b. Concentration II – International Economics and Business

- 3. Finance (FINN)
  - a. Concentration I – Banking
  - b. Concentration II – Financial Management/Investment
  - c. Concentration III – Insurance
  - d. Concentration IV – Real Estate
  - e. Concentration V – Personal Financial Management
- 4. General Business (GBUS)
- 5. Information Systems (ISYS)
  - a. Concentration I – Enterprise Resource Planning
  - b. Concentration II – Enterprise Systems
  - c. Concentration III – IT Applications Management
- 6. Management (MGMT)
  - a. Concentration I – Human Resource Management
  - b. Concentration II – Small Business and Entrepreneurship
  - c. Concentration III – Organizational Leadership
- 7. Marketing (MKTG)
  - a. Concentration I – Marketing Management
  - c. Concentration II – Retail Marketing
- 8. Transportation (TRNS)

**Requirements for B.S.B.A. Degree**

Students pursuing a degree in Walton College are classified as pre-business with an intended major until all pre-business requirements are fulfilled. To enroll in upper-division courses, a student must obtain at least a 2.50 (on a 4.00 scale) overall grade-point average in addition to the completion of all pre-business core courses (or equivalents), also with a minimum 2.50 GPA. Further, a student must earn a grade of “C” or better in each pre-business core course for admission into the major or for the graduation requirement.

	Hours
<b>A. University Core Requirements</b>	35
English Composition (two courses)**	6
Finite Mathematics**	3
American History or Government	3
Laboratory Science (two courses with labs)	8
Social Science (three courses)	9
Fine Arts & Humanities (two courses)	6
<b>B. Additional Requirements for Business Students</b>	9
Fundamentals of Communication**	3
Survey of Calculus**	3
Business Social Science (one of the following)	3
PSYC 2003 General Psychology	
PSYC 3013 Social Psychology	
PSYC 3023 Abnormal Psychology	
PSYC 3103 Cognitive Psychology	
PSYC 4063 Psychology of Personality	
PSYC 4073 Psychology of Learning	
PSYC 4123 Perception	
SOCI 2013 General Sociology	
SOCI 3223 Social Psychology	
SOCI 3303 Social Data and Analysis	
SOCI 4063 Organizations in Society	
PLSC 2003 American National Government	
PLSC 3103 Public Administration	
PLSC 3243 The Judicial Process	
PLSC 3803 International Organization	
PLSC/SOCI 4053 Political Sociology	

<b>C. Business Core Courses</b>	33
Lower-Division Requirements	27
WCOB 1120 Computer Competency Requirement**	
WCOB 1111 Freshman Business Connections**	1
WCOB 1012 Legal Environment of Business**	2
WCOB 1023 Business Foundations**	3
WCOB 1033 Data Analysis and Interpretation**	3
ECON 2013 Principles of Macroeconomics**	3
ECON 2023 Principles of Microeconomics**	3
WCOB 2013 Markets and Consumers**	3
WCOB 2023 Prod. and Delivery of Goods and Services**	3
WCOB 2033 Acquiring and Managing Human Capital**	3
WCOB 2043 Acquiring and Managing Financial Resources**	3
Upper-Division Requirement	6
WCOB 3016 Business Strategy and Planning	6
<b>D. Major Requirements</b>	24
<b>E. Business Electives</b>	15
<b>F. General Education Electives</b>	16

(A total of 16 hours of general education electives are required for the Bachelor of Science in Business Administration (B.S.B.A.). General education electives must be non-business courses and may include no more than six hours of PEAC or DEAC courses. Students may utilize general education electives to complete a minor outside the Walton College. In addition, these electives may fulfill requirements for Social Issues, Multicultural Environment, and Demographic Diversity if not otherwise completed in the Business Social Science requirement or by completing University Core).

**TOTAL REQUIRED FOR B.S.B.A. DEGREE 126**

(Total is less than the sum of the categories because some courses count in two categories.)

\*\*Pre-Business requirement: These 42 hours must be completed with a GPA of 2.50, an overall GPA of 2.5, and a grade of “C” or better in each course before a student is allowed to take upper-division business courses.

In addition to the core courses, each student will complete the required major courses, junior- senior-level business electives, and electives specified by each major.

Each student must have a 2.00 cumulative grade-point average in each of the following areas: all work completed at this university, all courses specifically designated for the major, and all required Walton College core and economics courses. Students must earn a grade of “C” or better in each of the pre-business core courses.

**Bachelor of Science in International Business Degree (B.S.I.B.)**

The Bachelor of Science in International Business degree is intended for students who wish to learn more about the international aspects of business. It provides preparation for a broad range of careers in business, including accounting, management, marketing, economics, information systems, finance, and transportation and logistics. This degree is also well suited for students wishing to continue their studies in law, international affairs, or graduate education in business and economics.

This degree requires completion of the University Core and Walton College Core courses, as well as course work in international business, a single foreign language and an area of study related to that language. In addition, students must select a concentration in one of the following areas: accounting, business economics, information systems, finance, general business, management, marketing, or transportation and logistics.

Students pursuing a degree in the Sam M. Walton College of Business are classified as pre-business with an intended concentration until all pre-business requirements are fulfilled. For admission into the intended concentration,

a student must obtain at least a 2.50 (on a 4.00 scale) overall grade-point average, in addition to the completion of all pre-business core courses listed elsewhere in the catalog (or equivalents), also with a minimum 2.50 grade-point average. Further, a student must earn a grade of "C" or better in each of the pre-business core courses for admission into the major or for the graduation requirement.

### Graduation Requirements for the B.S.I.B. Degree

Each student must have a 2.00 cumulative grade-point average in each of the following areas: all work completed at this university; all courses in the business core, and all designated international business courses/functional concentration/foreign language courses. In addition, students must earn a grade of "C" or better in each of the pre-business core courses.

Course Requirements for the B.S.I.B. Degree	Hours
<b>A. University Core Requirements</b>	35
See description and listing of the university core for the B.S.B.A. degree.	
<b>B. Additional Requirements for Business Students</b>	9
Fundamentals of Communication**	3
Survey of Calculus**	3
Business Social Science (one of the following)	3
PSYC 2003 General Psychology	
PSYC 3013 Social Psychology	
PSYC 3023 Abnormal Psychology	
PSYC 3103 Cognitive Psychology	
PSYC 4063 Psychology of Personality	
PSYC 4073 Psychology of Learning	
PSYC 4123 Perception	
SOCI 2013 General Sociology	
SOCI 3223 Social Psychology	
SOCI 3303 Social Data and Analysis	
SOCI 4063 Organizations in Society	
PLSC 2003 American National Government	
PLSC 3103 Public Administration	
PLSC 3243 The Judicial Process	
PLSC 3803 International Organization	
PLSC/SOCI 4053 Political Sociology	
<b>C. Business Core Courses</b>	33
<b>Lower-Division Requirements</b>	27
WCOB 1120 Computer Competency Requirement**	1
WCOB 1111 Freshman Business Connections**	2
WCOB 1012 Legal Environment of Business**	3
WCOB 1023 Business Foundations**	3
WCOB 1033 Data Analysis and Interpretation**	3
ECON 2013 Principles of Macroeconomics**	3
ECON 2023 Principles of Microeconomics**	3
WCOB 2013 Markets and Consumers**	3
WCOB 2023 Prod. and Delivery of Goods and Services**	3
WCOB 2033 Acquiring and Managing Human Capital**	3
WCOB 2043 Acquiring and Managing Financial Resources**	6
<b>Upper-Division Course</b>	6
WCOB 3016 Business Strategy and Planning	
<b>D. International Business and Collateral Course Requirements</b>	36
<b>International Business Requirements</b>	15
ECON 4633 International Trade	3
ECON 4643 International Macroeconomics and Finance	3

Select 9 hours from the following:	9
FINN 3703 International Finance	
MGMT 4583 International Mgmt.	
MKTG 4633 Global Marketing	
TLOG 4643 International Transportation and Logistics (Other courses may fulfill this requirement if approved by the department chair)	
ECON 3853 Emerging Markets	
ECON 3843 Economic Development, World Bank, and Multilateral Finance	
ECON 3933 The Japanese Economic System (Other courses may fulfill this requirement if approved by the department chair)	
<b>E. Business Concentration</b>	21
Students must complete one of the following business concentrations:	
<b>Accounting</b>	
ACCT 3533 Accounting Technology	3
ACCT 3613 Managerial Uses of Accounting Information	3
ACCT 3723 Intermediate Accounting I	3
ACCT 3753 Intermediate Accounting II	3
Plus three hour JR/SR accounting course	3
Plus six hours JR/SR interdisciplinary electives	6
<b>Business Economics</b>	
ECON 3033 Microeconomic Theory	3
ECON 3133 Macroeconomic Theory	3
ECON 4333 Economics of Organizations	3
ECON 4743 Introduction to Econometrics	3
Junior Senior ECON	3
Plus six hours JR/SR interdisciplinary electives	6
<b>Information Systems</b>	
ISYS 2263 Intro. to Information Systems Development	3
ISYS 3293 Systems Analysis and Design	3
ISYS 3393 Business Application Development in the Visual Basic Environment	3
ISYS 4283 Centralized Data Systems	3
Plus three hour JR/SR information systems course	3
Plus six hours JR/SR interdisciplinary electives	6
<b>Finance</b>	
FINN 3053 Financial Markets and Institutions	3
FINN 3703 International Finance	3
FINN 3063 Principles of Investments, or	3
FINN 3603 Corporate Finance	
FINN 4233 Advanced Corporate Finance, or	3
FINN 4133 Advanced Investments	
Plus three hour JR/SR finance course	3
Plus six hours JR/SR interdisciplinary electives	6
<b>General Business</b>	
Fifteen hours of 3000/4000-level courses in Walton College; no more than nine hours in a single academic area	15
Plus six hours JR/SR interdisciplinary electives	6
<b>Management</b>	
MGMT 4243 Ethics and Corporate Responsibility	3
MGMT 4583 International Mgmt.	3
Plus nine hours JR/SR management courses	9
Plus six hours JR/SR interdisciplinary electives	6
<b>Marketing</b>	
MKTG 3633 Marketing Research	3

MKTG 3553 Consumer Behavior	3
MKTG 4853 Marketing Mgmt.	3
MKTG 4633 Global Marketing	3
Plus three hour JR/SR marketing course	3
Plus six hours JR/SR interdisciplinary electives	6

**Transportation and Logistics**

TLOG 3443 Principles of Transportation	3
TLOG 3613 Business Logistics	3
TLOG 4643 International Transportation and Logistics	3
Plus six hours of JR/SR transportation courses	6
Plus six hours JR/SR interdisciplinary electives	6

**F. Foreign Language Requirements** 12

Students whose native language is English or whose native language is not taught at the University of Arkansas must complete 12 hours of university course work in a single foreign language — six hours of intermediate language and six hours of upper-division course work in communications and business language, or equivalent. Students who, on the basis of prior knowledge of language, omit one or both courses in the intermediate language sequence — 2003 and 2013 level — may receive degree credit for omitted courses if they validate their higher placement by passing the business language course (or equivalent) with a grade of “C” or above. Students with no previous foreign language training or only rudimentary knowledge of a foreign language will be required to complete up to six hours of elementary language — 1003 and 2003 level — in addition to the 12 hours of language specified above. No degree credit will be given for elementary language courses.

Students may select one of the following language tracks:

- Arabic – ARAB 2013 or equivalent
- Chinese – CHIN 2003, CHIN 2013, CHIN 3033, and any other upper division CHIN
- French – FREN 2003, FREN 2013, FREN 4333, FREN 3033 or FREN 3003
- German – GERM 2003, GERM 2013, GERM 3003, and GERM 4333
- Italian – ITAL 2003, ITAL 2013, ITAL 3003, and ITAL 3013
- Japanese – JAPN 2003, JAPN 2013, JAPN 3003, and JAPN 3013
- Spanish – SPAN 2003, SPAN 2013, SPAN 3003, and SPAN 4333

Students whose native language is not English but is taught at the University of Arkansas must select a third language from the list above or substitute six hours of upper-division English language courses (i.e., speech, writing, or U.S. literature), to be selected with the consent of an adviser and department chair. Those students whose native language is not taught at the University of Arkansas will normally be required to select a third language.

**G. Area Studies Requirements** 9

For students taking a foreign language, nine hours of upper-division course work in the J. William Fulbright College of Arts and Sciences are required. Domestic students can satisfy this requirement in one of three ways:

- 1) any upper division foreign language course,
- 2) minor in a foreign language, and/or
- 3) select upper division courses related to the foreign language to include:
  - Arabic – any upper division course for Middle Eastern Studies (MEST) to include MEST 4003, 4003H or additional courses listed under MEST in the university catalog

Chinese/Japanese/Asian Studies – any upper division course for Asian Studies (AIST)

French – any upper division course for EUST

German – any upper division course for EUST Italian – any upper division course for EUST

Spanish – any upper division course for Latin American Studies (LAST) or European Studies (EUST) to include LAST 4003, LAST 4003H, or LAST 470V or additional courses listed under LAST in the university catalog, or EUST 399VH, EUST 4003, EUST 4003H, EUST 470V, or EUST 470VH or additional courses listed under EUST in the university catalog.

International students may satisfy this requirement in one of two ways:

- 1) For students who choose to take a third language, area studies requirements are the same as those for domestic students.
- 2) For students who choose to take six hours of upper division English to satisfy their language requirement, nine hours of upper division course work in the J. William Fulbright College of Arts and Sciences pertaining to the United States to include any upper division course for American Studies (AMST) listed in the University catalog.

**H. International Experience Requirement**

At a minimum, a domestic student must complete a study abroad program approved by the Walton College of at least four weeks and six credit hours, or work abroad, or work with the international division of a domestic company as part of their program. Students are strongly encouraged, but not required, to seek job experience in a company located in a country related to their foreign language requirement.

**TOTAL DEGREE REQUIREMENTS** 125

(Total is more than the sum of the categories because some courses count for multiple requirements.)

**Clarifying Notes on Degree Requirements**

1. Courses that are required in either Walton College or the international business core and also are required in one of the business concentrations cannot be used to satisfy both requirements. For example, students who take FINN 3703 to satisfy the finance concentration requirements cannot also use it to satisfy the international business requirements.
2. Students who select ECON 2013 and ECON 2023 to partially satisfy the social science bloc and a foreign language numbered 2003 to partially satisfy the fine arts and humanities bloc of the University Core Requirements can complete the degree with 125 hours. Students selecting other courses to satisfy these requirements will have longer programs.

**Bachelor of Science in International Business Eight-Semester Degree Program:**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The International Business degree program has eight concentrations:

- Accounting
- Business Economics
- Finance
- General Business
- Information Systems
- Management
- Marketing
- Transportation and Logistics

The first four semesters of each of concentration are exactly the same and are listed immediately below. The final four semesters of each concentration follow after that.

In addition to the coursework below, students must complete an International Experience Requirement and the Advanced Composition Requirement or gain exemption from the latter. Courses in **BOLD** must be taken in the semester designated. Courses in *ITALICS* may be taken in varied sequences as long as other designated requirements for these courses are met. Although other courses listed are not required to be completed in the designated sequence, the recommendations noted below are preferred.

### B.S.I.B. First Four Semesters

Fall Semester Year 1	
3	<i>ENGL 1013 Composition I**</i> – University Core
3	<b>MATH 2053 Finite Math</b> – University Core
3	<b>COMM 1313 Fundamentals of Communication</b>
1	<b>WCOB 1111 Freshman Business Connections</b>
2	WCOB 1012 Legal Environment of Business *
0	<b>WCOB 1120 Computer Competency Requirement</b>
3	<i>Intermediate Foreign Language I (2003-level)</i>
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	<i>ENGL 1023 Composition II **</i> – University Core
3	<b>WCOB 1023 Business Foundations</b>
3	<b>WCOB 1033 Data Analysis and Interpretation</b>
3	<b>ECON 2023 Microeconomics</b> – University Core
3	<i>Intermediate Foreign Language II (2013 level)</i>
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	MATH 2043 Survey of Calculus **
3	<i>ECON 2013 Macroeconomics **</i> - University Core
6	Select TWO of the following: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
3	<i>U.S. History or Political Science</i> – University Core
3	<i>Upper division foreign language course</i>
<b>18</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	Fine Art/Humanities – University Core
4	Natural Science – University Core
3	Upper division foreign language course
6	Select TWO of the following not completed in previous semester: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
<b>16</b>	<b>Semester Hours</b>
ALL pre-business requirements should be met by end of term	

### B.S.I.B. Accounting Final Four Semesters

Fall Semester Year 3	
6	WCOB 3016 Business Strategy and Planning
3	<i>Business Social Science</i>
3	<b>ACCT 3723 Intermediate Accounting I</b>
3	International Business and Collateral Elective
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	<b>ACCT 3533 Accounting Technology</b>
3	ACCT 3613 Managerial Uses of Accounting
3	ECON 4633 International Trade Policy

3	Area Studies Course – see page 211 in catalog
3	<i>Social Science</i> – University Core
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	ACCT 3753 Intermediate Accounting II
3	ECON 4643 International Macroeconomics and Finance
3	International Business and Collateral Elective
3	Area Studies Course
4	<i>Natural Science</i> – University Core
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	ACCT elective
3	Area Studies Course
3	International Business and Collateral Elective
6	Junior Senior Business Electives
<b>15</b>	<b>Semester Hours</b>
<b>125</b>	<b>Total Hours</b>

### B.S.I.B. Business Economics Final Four Semester

Fall Semester Year 3	
6	WCOB 3016 Business Strategy and Planning
3	<i>Business Social Science</i>
3	ECON 3133 Macroeconomic Theory
3	International Business and Collateral Elective
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	ECON 4743 Introduction to Econometrics
3	ECON elective
3	ECON 4633 International Trade
3	Area Studies Course – see page 211 in catalog
3	<i>Social Science</i> – University Core
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	ECON 4333 Economics of Organizations
3	ECON 4643 International Macroeconomics and Finance
3	International Business and Collateral Elective
3	Area Studies Course
4	<i>Natural Science</i> – University Core
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	Junior Senior ECON elective
3	Area Studies Course
3	International Business and Collateral Elective
6	Junior Senior Business Electives
<b>15</b>	<b>Semester Hours</b>
<b>125</b>	<b>Total Hours</b>

### B.S.I.B. Finance Final Four Semesters

Fall Semester Year 3	
6	WCOB 3016 Business Strategy and Planning
3	<i>Business Social Science</i>
3	FINN 3053 Financial Markets and Institutions
3	<b>FINN 3013 Financial Analysis</b>
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	<b>FINN 3063 Principles of Investments or FINN 3603 Corporate Finance</b>
3	FINN 3703 International Finance
3	ECON 4633 International Trade Policy
3	Area Studies Course – see page 211 in catalog



3	<i>Social Science</i> – University Core
<b>15</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	<b>FINN 4133 Advanced Investments or FINN 4233 Advanced Corporate Finance</b>
3	ECON 4643 International Macroeconomics and Finance
3	International Business and Collateral Elective
3	Area Studies Course
4	<i>Natural Science</i> – University Core
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3	FINN elective
3	Area Studies Course
3	International Business and Collateral Elective
6	Junior Senior Business Electives
<b>15</b>	<b>Semester Hours</b>
<b>125</b>	<b>Total Hours</b>

**B.S.I.B. General Business Final Four Semesters**

<b>Fall Semester Year 3</b>	
6	WCOB 3016 Business Strategy and Planning
3	<i>Business Social Science</i>
3	Junior Senior Business Elective
3	International Business and Collateral Elective
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
6	Junior Senior Business Electives
3	ECON 4633 International Trade
3	Area Studies Course – see page 211 in catalog
3	<i>Social Science</i> – University Core
<b>15</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	Junior Senior Business Elective
3	ECON 4643 International Macroeconomics and Finance
3	International Business and Collateral Elective
3	Area Studies Course
4	<i>Natural Science</i> – University Core
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3	Junior Senior Business Elective
3	Area Studies Course
3	International Business and Collateral Elective
6	Junior Senior Business Electives
<b>15</b>	<b>Semester Hours</b>
<b>125</b>	<b>Total Hours</b>

**B.S.I.B. Information Systems**

<b>Fall Semester Year 3</b>	
6	WCOB 3016 Business Strategy and Planning
3	<i>Business Social Science</i>
3	<b>ISYS 2263 Introduction to Information Systems</b>
3	International Business and Collateral Elective
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
3	<b>ISYS 3293 System Analysis and Design</b>
3	<b>ISYS 3393 Business Application Development Fundamentals</b>
3	ECON 4633 International Trade
3	Area Studies Course – see page 211 in catalog

3	<i>Social Science</i> – University Core
<b>15</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	<b>ISYS 4283 Business Database</b>
3	ECON 4643 International Macroeconomics and Finance
3	International Business and Collateral Elective
3	Area Studies Course
4	<i>Natural Science</i> – University Core
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3	ISYS elective
3	Area Studies Course
3	International Business and Collateral Elective
6	Junior Senior Business Electives
<b>15</b>	<b>Semester Hours</b>
<b>125</b>	<b>Total Hours</b>

**B.S.I.B. Management Final Four Semesters**

<b>Fall Semester Year 3</b>	
6	WCOB 3016 Business Strategy and Planning
3	<i>Business Social Science</i>
3	MGMT 4243 Ethics and Corporate Responsibility
3	International Business and Collateral Elective
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
3	MGMT elective
3	MGMT 4583 International Management
3	ECON 4633 International Trade
3	Area Studies Course – see page 211 in catalog
3	<i>Social Science</i> – University Core
<b>15</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	MGMT elective
3	ECON 4643 International Macroeconomics and Finance
3	International Business and Collateral Elective
3	Area Studies Course
4	<i>Natural Science</i> – University Core
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3	MGMT elective
3	Area Studies Course
3	International Business and Collateral Elective
6	Junior Senior Business Electives
<b>15</b>	<b>Semester Hours</b>
<b>125</b>	<b>Total Hours</b>

**B.S.I.B. Marketing Final Four Semesters**

<b>Fall Semester Year 3</b>	
6	WCOB 3016 Business Strategy and Planning
3	Business Social Science
3	<b>MKTG 3433 Introduction to Marketing Strategy</b> (Jr Sr Business elective)
3	International Business and Collateral Elective
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
3	<b>MKTG 3633 Marketing Research</b>
3	<b>MKTG 3553 Consumer Behavior</b>
3	ECON 4633 International Trade
3	Area Studies Course – see page 211 in catalog

3	<i>Social Science</i> – University Core
<b>15</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	MKTG 4633 Global Marketing
3	ECON 4643 International Macroeconomics and Finance
3	International Business and Collateral Elective
3	Area Studies Course
4	<i>Natural Science</i> – University Core
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3	MKTG 4853 Marketing Management
3	MKTG elective
3	Area Studies Course
3	International Business and Collateral Elective
3	Junior Senior Business Electives
<b>15</b>	<b>Semester Hours</b>
<b>125</b>	<b>Total Hours</b>

### B.S.I.B. Transportation and Logistics Final Four Semesters

<b>Fall Semester Year 3</b>	
6	WCOB 3016 Business Strategy and Planning
3	<i>Business Social Science</i>
3	TLOG 3613 Business Logistics
3	International Business and Collateral Elective
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
3	TLOG 3443 Introduction to Transportation
3	TLOG 4643 International Transportation and Logistics
3	ECON 4633 International Trade Policy
3	Area Studies Course – see page 211 in catalog
3	<i>Social Science</i> – University Core
<b>15</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	TLOG elective
3	ECON 4643 International Macroeconomics and Finance
3	International Business and Collateral Elective
3	Area Studies Course
4	<i>Natural Science</i> – University Core
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3	TLOG elective
3	Area Studies Course
3	International Business and Collateral Elective
6	Junior Senior Business Electives
<b>15</b>	<b>Semester Hours</b>
<b>125</b>	<b>Total Hours</b>

- \* Must be taken prior to fall semester of sophomore year  
 \*\* Must be taken prior to fall semester of junior year  
 \*\*\* Must be taken prior to fall semester of senior year  
 \*\*\*\* No more than 9 hours of junior senior business electives can be taken in a single academic area

### MINORS IN THE J. WILLIAM FULBRIGHT COLLEGE OF ARTS AND SCIENCES

Students in Walton College may pursue an academic minor in the J. William Fulbright College of Arts and Sciences. Academic minors usually consist of 15 to 18 hours of course work. The available minors and course requirements are

specified in the Fulbright College section of this catalog. Students must notify the Undergraduate Programs Office in Walton College of their intention to pursue a minor as early as possible. Walton College will certify that the requirements of the minor have been satisfied by graduation and, with the assistance of the Fulbright College, will advise students on the requirements to complete a minor. The minor will be designated on the student's transcript.

Courses that are part of the University Core Requirements or the additional General Education Requirements or any other non-business course that is part of a student's course of study may also be counted for credit in a minor. For example, ANTH 1023 Introduction to Cultural Anthropology, is a concentration in the B.S.B.A. social science bloc and can also be used to satisfy the requirements of the anthropology minor. Other courses in a minor can be counted as general education electives. Walton College economics majors in the business economics concentration or the international economics and business concentration may not obtain a Fulbright College minor in economics.

### Business Administration Minors for Non-Business Students

To facilitate students outside Walton College in obtaining knowledge that will assist them in making sustained contributions to organizations and society in a global, diverse, and dynamic environment, the Walton College offers a business minor. The minor requires completion of 20 to 21 required hours of study (including equivalencies) with at least 50 percent of the courses applied toward the minor taken in residence. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor.

All upper level minor requirements must be taken in residence. All students seeking a business minor are required to complete the Walton College computer competency requirement (WCOB 1120) and the following courses:

- ECON 2143 Basic Economics Theory and Practice
  - WCOB 1023 Business Foundations
  - WCOB 1033 Data Analysis and Interpretation or equivalent
- In addition, students must select and complete one of the following concentrations:

#### Concentration 1 – General Business

- Select 12 hours from the following courses (at least 6 hours must be at the 3000 or 4000 level).
- WCOB 1012 Legal Environment of Business
  - WCOB 2013 Markets and Consumers
  - WCOB 2023 Production and Delivery of Goods and Services
  - WCOB 2033 Acquiring and Managing Human Capital
  - WCOB 2043 Acquiring and Managing Financial Resources
- Plus any other 3000- or 4000-level Walton College course

#### Concentration 2 – Accounting

- ACCT 3613 Managerial Uses of Accounting Info
  - ACCT 3723 Intermediate Accounting I
- Plus an additional six hours selected from the following:
- ACCT 3533 Accounting Technology
  - ACCT 3753 Intermediate Accounting II
  - ACCT 3843 Fundamentals of Taxation

#### Concentration 3 – Business Economics

- ECON 4333 Economics of Organizations
- Plus an additional nine hours of 3000- or 4000-level business economics courses.

#### Concentration 4 – Enterprise Resource Planning

- WCOB 2013 Markets and Consumers
  - WCOB 2043 Acquiring and Managing Financial Resources
  - WCOB 4213 ERP Fundamentals
- Plus an additional six hours from the following:
- ISYS 4233 Seminar in ERP Development
  - ISYS 4293 Business Intelligence
  - WCOB 4223 Configuration and Implementation

**Concentration 5 – Enterprise Systems**

ISYS 4453 Introduction for Enterprise Servers  
 ISYS 4463 Enterprise Transaction Systems  
 Plus an additional three hours from the following:  
 ISYS 4233 Seminar in ERP Development  
 ISYS 4293 Business Intelligence  
 WCOB 4213 ERP Fundamentals  
 WCOB 4223 Configuration and Implementation

**Concentration 6 – Finance**

WCOB 2043 Acquiring and Managing Financial Resources  
 Plus an additional nine hours of 3000-4000 level finance courses

**Concentration 7 – Information Systems**

ISYS 3293 System Analysis and Design  
 ISYS 3393 Business Applications and Development Fundamentals  
 Plus an additional three hours from the following:  
 WCOB 4213 ERP Fundamentals  
 WCOB 4223 Configuration and Implementation

One 3-hour 4000 level ISYS course

**Concentration 8 – International Business**

Select 12 hours from the following:  
 ECON 3843 Economic Development, World Bank, and Multilateral Finance  
 ECON 3853 Emerging Markets  
 ECON 3933 The Japanese Economic System  
 ECON 4633 International Trade  
 ECON 4643 International Macroeconomics and Finance  
 ECON 468V International Economics and Business Seminar  
 FINN 3703 International Finance  
 MGMT 4583 International Management  
 MKTG 4633 Global Marketing  
 TLOG 4643 International Transportation and Logistics

**Concentration 9 – Management**

MGMT 4243, Ethics and Corporate Responsibility  
 Plus an additional nine hours of 3000/4000 level management courses (may include WCOB 2033, Acquiring and Managing Human Capital OR MGMT 3563, Organizational Behavior)

**Concentration 10 – Marketing**

MKTG 3433 Introduction to Marketing Strategy  
 Plus an additional nine hours selected from the following:  
 MKTG 3553 Consumer Behavior  
 MKTG 3633 Marketing Research  
 MKTG 4233 Integrated Marketing Communications  
 MKTG 4343 Selling and Sales Management  
 MKTG 4633 Global Marketing  
 MKTG 4433 Retail Strategy  
 MKTG 4943 Retail Buying and Merchandise  
 TLOG 3613 Business Logistics

**Concentration 11 – Transportation and Logistics**

TLOG 3443 Principles of Transportation  
 TLOG 3613 Business Logistics  
 Plus an additional six hours selected from the following:  
 TLOG 3623 Purchasing and Inventory Systems  
 TLOG 4633 Transportation Carrier Management  
 TLOG 4643 International Transportation and Logistics  
 TLOG 4653 Transportation and Logistics Strategy

In addition to the above course requirements, non-business, degree-seeking students working toward a minor should note the following:

1. Students who elect to obtain a business minor must provide written notice of their intent to the dean's office of the college in which they are receiving a degree. This notice and all requirements for the busi-

ness minor must be completed prior to the awarding of the student's undergraduate degree.

2. Business minor students must complete all 1000- and 2000-level courses required for the business minor and be a junior- or senior-level student to enroll in 3000- or 4000-level business courses.
3. All specific course prerequisites must be met. Although business minor students are not required to satisfy the entire pre-business core, they must complete the required courses and any other prerequisite course specified prior to enrolling in a 3000/4000-level course.
4. ECON 2143 will substitute for ECON 2013/2023 for prerequisite purposes. In addition, students who take both ECON 2013 (Macroeconomics) and ECON 2023 (Microeconomics) will satisfy the economics requirements of the minor.
5. Business minor students are ineligible to take WCOB 3016 Business Strategy and Planning.
6. All equivalencies must be approved by the senior associate dean for academic programs and research or his designee.

**GRADUATE STUDIES**

The University of Arkansas offers the following advanced degrees in business: Master of Accountancy, Master of Business Administration, Master of Arts in Economics, Master of Information Systems, Doctor of Philosophy in Business Administration, and Doctor of Philosophy in Economics.

For further information about these programs and requirements for admission, see the Graduate School Catalog or write to the assistant director of marketing and recruiting, Graduate School of Business, 475 WJWH.

**ACCREDITATIONS**

The college has been a member of and accredited by AACSB International-The Association to Advance Collegiate Schools of Business since 1931. The accounting program was accredited separately in 1986 at both the bachelor's and master's level. The master's degree in the business administration program was approved in 1963. Accreditation by and membership in AACSB signifies commitment by the college to the goals of promoting and actualizing the highest standards of business education.

**ACCOUNTING (ACCT)**

- Vernon Richardson  
 Department Chair, 401 WCOB, 479-575-4051
- Walter B. Cole Chair in Accounting and Professor Bouwman
  - Garrison/Wilson Chair in Accounting and Professor Finn
  - Doyle Z. and Maynette Derr Williams Chair in Professional Accounting and Professor Pincus
  - S. Robson Walton Chair in Accounting and Professor Richardson
  - Doris M. Cook Chair in Accounting and Associate Professor Myers (L.)
  - Professor Norwood
  - Nolan E. Williams Lecturer and Associate Professor Peters
  - Assistant Professor and BKD Lectureship in Accounting Henderson
  - Assistant Professor Sanchez (J.M.)
  - Clinical Associate Professor Leflar
  - Instructors Greenhaw, Horton, Sanchez (D.), Shook, Weitzel

The mission of the department of accounting is to cultivate an environment of educational excellence. We do so by pursuing the following endeavors:

- Providing a learning environment in which students interact with others to identify and solve accounting and business problems.
- Developing and disseminating knowledge that has the potential for significant impact on accounting, business, and education.
- Interacting with the accounting profession, the business and academic communities, and the community at large.

The department of accounting offers an undergraduate degree program in accounting and graduate programs at both the master's and doctoral levels. The department's programs are accredited by the AACSB – The International Association for Management Education, which ensures quality and promotes excellence and continuous improvement in undergraduate and graduate education.

A major in accounting is preparation for success in the business world. Every business needs accounting help, whether it is the largest retail company in the world, a small family-owned enterprise, an agency for the homeless, or a musical group touring the country. The accounting major provides an excellent foundation for a variety of careers.

For example, the professional public accountant provides auditing and accounting services to client business and non-business organizations in a variety of industries. A management accountant works for a particular organization in its finance and operations areas or becomes part of the management team. Some accountants are employed by non-profit organizations such as the American Cancer Society, state and local governments, or government agencies like the FBI. Other accounting graduates are self-employed in a variety of professions or businesses, and some continue in graduate school to prepare for teaching careers.

Professional examinations, such as the Certified Public Accountant (CPA) or Certified Management Accountant (CMA) examinations, are governed by the organizations that administer the exam. Students should see the accounting department upon enrollment in the University of Arkansas for information relative to the professional exams.

The education objective at the undergraduate level is to provide an environment in which students learn skills necessary to become professional accountants, including information development and distribution; knowledge of accounting, auditing, and tax; knowledge of business and society; communication skills; analytical and decision-making skills; leadership; and professionalism. In addition, the accounting department offers courses in Business Law.

Accounting Major Requirements	Hours
Complete the requirements for a B.S.B.A. degree as listed on page 209.	
<b>Total General Education</b>	60
<b>Walton College Core Requirements (See page 209)</b>	33
<b>Course Requirements in the Major</b>	24
ACCT 3533 Accounting Technology	3
ACCT 3613 Managerial Uses of Accounting Info	3
ACCT 3723 Intermediate Accounting I	3
ACCT 3753 Intermediate Accounting II	3
ACCT 3843 Fundamentals of Taxation	3
ACCT 4673 Product, Project and Service Costing	3
ACCT 4963 Operational Auditing	3
Choose a total of three hours from any of the following:	3
ACCT 310V Spring Accounting Internship	
ACCT 410V Special Topics	
ACCT 4003H Honors Accounting Colloquium	
ISYS 2263 Introduction to Information Systems Development	
WCOB 4213 ERP Fundamentals	
Walton College Study Abroad Course	

<b>Junior- senior-level electives within Walton College</b>	15
Maximum of 27 hours of ACCT courses in department (core, major, elective). More than 27 hours allowed if the extra courses are part of inter-disciplinary minor or collateral track.	
<b>Total Walton College Requirements</b>	60
<b>Total Degree Requirements</b>	126

NOTE: Selection of electives should be made in consultation with academic advisers. Students planning on taking professional examinations should ascertain course requirements by examining authorities. Successful completion of a Master of Accountancy Degree from the University of Arkansas will qualify a student to take the CPA examination in Arkansas. B.S.B.A. graduates would need additional accounting hours and other courses amounting to a total of 150 semester hours to sit for the CPA exam in Arkansas.

### Accounting Eight-Semester Degree Program:

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

In addition to the coursework below, students must complete the Advanced Composition Requirement or gain exemption. Courses in BOLD must be taken in the designated semester. Courses in ITALIC may be taken in varied sequences as long as other designated requirements for these courses are met. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

### Accounting Eight-Semester Degree Plan

Fall Semester Year 1	
3	<i>ENGL 1013 Composition I</i> ** - University Core
3	<b>MATH 2053 Finite Math</b> – University Core
3	<b>COMM 1313 Fundamentals of Communication</b>
1	<b>WCOB 1111 Freshman Business Connections</b>
2	WCOB 1012 Legal Environment of Business *
0	<b>WCOB 1120 Computer Competency Requirement</b>
3	<i>U.S. History or Political Science</i> – University Core
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	<i>ENGL 1023 Composition II</i> ** - University Core
3	<b>WCOB 1023 Business Foundations</b>
3	<b>WCOB 1033 Data Analysis and Interpretation</b>
3	<b>ECON 2023 Microeconomics</b> – University Core
4	<i>Natural Science</i> – University Core
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	MATH 2043 Survey of Calculus **
3	ECON 2013 Macroeconomics ** - University Core
6	Select TWO of the following: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
3	<i>Social Science</i> – University Core
3	<i>Fine Art/Humanities</i> – University Core
<b>18</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	<i>Fine Art/Humanities</i> – University Core
4	<i>Natural Science</i> – University Core
3	<i>Business Social Science</i>
6	Select TWO of the following not completed in previous semester: <b>WCOB 2013 Markets and Consumers</b>

<b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>	
<b>16</b>	<b>Semester Hours</b>
ALL pre-business requirements should be met by end of term	
<b>Fall Semester Year 3</b>	
3	<b>ACCT 3723 Intermediate Accounting I</b>
3	<b>ACCT 3613 Managerial Uses of Accounting</b>
3	Junior/Senior Business Elective
6	WCOB 3016 Business Strategy and Planning
1	<i>General Education Elective</i>
<b>16</b>	<b>Semester hours</b>
<b>Spring Semester Year 3</b>	
3	<b>ACCT 3553 Accounting Technology</b>
3	<b>ACCT 3753 Intermediate Accounting II</b>
3	<b>ACCT 3843 Fundamentals of Taxation</b>
3	Junior Senior Business Elective or ISYS 2263 Introduction to Information Systems Development
3	<i>ENGL 2003 or ENGL 2013 or General Education Elective IF Advanced Composition Requirement has already been met ***</i>
<b>15</b>	<b>Semester hours</b>
<b>Fall Semester Year 4</b>	
3	Select ONE of the following: <b>ACCT 4673 Production Project and Service Costing</b> <b>ACCT 4963 Operational Auditing</b>
6	Junior Senior Business Electives
6	<i>General Education Electives</i>
<b>15</b>	<b>Semester hours</b>
<b>Spring Semester Year 4</b>	
3	Choose a total of three credit hours from any of the courses below: <b>ACCT 310V Accounting Internship</b> <b>ACCT 410V Special Topics</b> <b>ACCT 4003H Honors Accounting Colloquium</b> <b>ACCT 4213 ERP Fundamentals</b> <b>3 credit hours of WCOB Study Abroad</b>
6	Junior Senior Business Electives
6	<i>General Education Electives</i>
<b>15</b>	<b>Semester hours</b>
<b>126</b>	<b>Total hours</b>

- \* Must be taken prior to fall semester of sophomore year
- \*\* Must be taken prior to fall semester of junior year
- \*\*\* Must be taken prior to fall semester of senior year

**Accounting Minor for Business Students:**

The Department of Accounting offers a minor for Walton College students desiring more knowledge of accounting to assist them in their business careers. The minor requires the completion of 15 specific hours of study with all of the courses applied toward the minor taken in residence. The 15 hours include the following courses:

- ACCT 3533 Accounting Technology
- ACCT 3613 Managerial Uses of Accounting Information
- ACCT 3723 Intermediate Accounting I
- ACCT 3753 Intermediate Accounting II
- ACCT 3843 Fundamentals of Taxation

Students who desire to earn an Accounting minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upper level minor requirements must be taken in residence.

SEE PAGE 310 FOR ACCOUNTING (ACCT) COURSES  
SEE PAGE 323 FOR BUSINESS LAW (BLAW) COURSES

**ECONOMICS (ECON)**

- Gary D. Ferrier  
Department Chair, 402 WCOB, 479-575-ECON (3266)
- Margaret Gerig and R.S. Martin, Jr. Chair in Business and Professor Farmer
  - Lewis E. Epley Jr. Professorship in Economics and Professor Ferrier
  - University Professors Britton, Gay
  - Professors Curington, Dixon, Horowitz, Ziegler
  - Associate Professors Deck, Kali, Mendez, Reyes
  - Assistant Professor Gu
  - Clinical Associate Professor Stapp
  - Instructor Johnson

The department of economics offers two concentrations within the business economics major:

- 1) business economics
- 2) international economics and business.

The concentration in business economics is intended for those students who are interested primarily in business, but at the same time have a desire to understand the more advanced tools of economic analysis. Such a background is excellent preparation for careers in corporate research and planning, as well as careers with government and regulatory agencies, for graduate study in business and economics, and for law school. Students who want to pursue an advanced degree in business economics can, with appropriate planning, complete a master's degree at the University of Arkansas within 12 months after receiving a B.S.B.A. degree. Please see the economics department chair for more information.

The international economics and business concentration is intended for students who wish to learn more about the international aspects of economics and business. It provides preparation for a broad range of careers in business, including management, marketing, and finance.

It is strongly recommended that economics majors who plan to continue their studies at the graduate level take two semesters of calculus (MATH 2554 and MATH 2564) and linear algebra (MATH 3083). These courses will substitute for the math courses required within Walton College core (MATH 2043 and MATH 2053).

**Business Economics Concentration**

The major in Business Economics requires 24 hours of major and collateral courses in the discipline as well as satisfying the other requirements for the B.S.B.A. degree. A maximum of 27 hours is allowed in a WCOB major or discipline field of study (i.e., core, major, electives) unless the extra courses are part of an interdisciplinary minor or collateral track. See an adviser for selection of courses.

The courses required for the business economics concentration include those required in Walton College and Fulbright College. In addition, 15 hours of specified courses (listed below) are required:

Complete the requirements for a B.S.B.A. degree as listed on page 209.	<b>Hours</b>
<b>Total General Education</b>	60
<b>Walton College Core Requirements</b> (See page 209)	33
<b>Course Requirements in the concentration</b>	24
ECON 3033 Microeconomic Theory	3
ECON 3133 Macroeconomic Theory	3
ECON 4333 Economics of Organizations	3

ECON 4743 Intro. to Econometrics, or ECON 4753 Forecasting	3
Nine hours of ECON 3000/4000	9
Collateral Course (may be selected from MATH 2103, MATH 2564, MATH 2574, AGECE 3413, AGECE 4413, GEOG 3353, and any upper division course in ACCT, FINN, ISYS, MGMT, MKTG, MATH, and STAT)	3
<b>Junior- senior-level electives within Walton College</b>	15
Maximum of 27 hours of ECON courses in de-partment (core, major, elective). More than 27 hours allowed if the extra courses are part of in- terdisciplinary minor or collateral track.	
<b>Total Walton College Requirements</b>	60
<b>Total Degree Requirements</b>	126

### International Economics and Business Concentration

The major in International Economics requires 24 hours of major and collateral courses in the discipline as well as satisfying the other requirements for the B.S.B.A. degree. A maximum of 27 hours is allowed in a Walton College of Business major or discipline field of study (i.e., core, major, electives) unless the extra course is part of an interdisciplinary minor or collateral track. See an adviser for selection of courses. The courses required for the international economics and business concentration include those required in Walton College and Fulbright College. In addition, 21 hours of economics and business courses, nine hours of upper-division courses in the Fulbright College, and six hours of a single foreign language at the intermediate level or above, and three hours at the upper-division level in business communications, or equivalent, in the same foreign language are specified.

Complete the requirements for a B.S.B.A. degree as listed on page 209.	<b>Hours</b>
<b>University Core</b>	35
<b>Additional University Core</b>	9
<b>Walton College Core Requirements</b> (See page 209)	33
<b>Course Requirements in the concentration</b>	24
ECON 3033 Microeconomic Theory	3
ECON 3133 Macroeconomic Theory	3
ECON 4633 International Trade	3
ECON 4643 International Macroeconomics and Finance	3
ECON Electives or Collateral Courses	6
Select two classes (six hours) from the following:	
FINN 3703 International Finance	
MGMT 4583 International Management	
MKTG 4633 Global Marketing	
TLOG 4643 International Transportation and Logistics	
ECON 3853 Emerging Markets	
ECON 3843 Economic Development, World Bank, and Multilateral Finance	
ECON 3933 The Japanese Economic System	
Other courses may fulfill this requirement as approved by the economics department chair	
<b>Foreign Language Requirements</b>	9
Students whose native language is English or whose native language is not taught at the University of Arkansas must complete nine hours of university course work in a single foreign language — six hours of intermediate language and three hours of upper-division course work in communications and business language, or equivalent. Students who, on the basis of prior knowledge of language, omit one or both courses in the intermediate language sequence — at 2003 and 2013 level — may receive degree credit for omitted courses if they validate their higher placement by passing the business language course (or equivalent) with a grade of	

“C” or above. Students with no previous foreign language training or only rudimentary knowledge of a foreign language will be required to complete up to six hours of elementary language — at 1003 and 2003 level — in addition to the nine hours of language specified above.

Students may select one of the following language tracks:

- Arabic – ARAB 2013 or equivalent
- Chinese – CHIN 2003, CHIN 2013, CHIN 3033, and any other  
upper division CHIN
- French – FREN 2003, FREN 2013, FREN 4333, FREN 3033 or  
FREN 3003
- German – GERM 2003, GERM 2013, GERM 3003, and  
GERM 4333
- Italian – ITAL 2003, ITAL 2013, ITAL 3003, and ITAL 3013
- Japanese – JAPN 2003, JAPN 2013, JAPN 3003, and JAPN 3013
- Spanish – SPAN 2003, SPAN 2013, SPAN 3003, and SPAN 4333

Students whose native language is not English but is taught at the University of Arkansas must select a third language from the list above, or substitute six hours of upper-division English language courses (i.e., speech, writing, or U.S. literature), to be selected with the consent of the department chair. Those students whose native language is not taught at the University of Arkansas will normally be required to select a third language.

<b>Area Studies Requirements</b>	<b>Hours</b>
For students taking a foreign language, nine hours of upper- division course work in the J. William Fulbright College of Arts and Sciences are required. Domestic students can satisfy this requirement in one of three ways:	9
1) any upper division foreign language course,	
2) minor in a foreign language, and/or	
3) select upper division courses related to the foreign language to include:	
Arabic – any upper division course for Middle Eastern Studies (MEST) to include MEST 4003, MEST 4003H or additional courses listed under MEST in the university catalog	
Chinese/Japanese/Asian Studies – any upper division course for Asian Studies (AIST)	
French – any upper division course for EUST	
German – any upper division course for EUST	
Italian – any upper division course for EUST	
Spanish – any upper division course for Latin American Studies (LAST) or European Studies (EUST) to include LAST 4003, LAST 4003H, or LAST 470V or additional courses listed under LAST in the university catalog, or EUST 399VH, EUST 4003, EUST 4003H, EUST 470V, or EUST 470VH or additional courses listed under EUST in the University catalog.	
International students may satisfy this requirement in one of two ways:	
1) For students who choose to take a third language, area studies requirements are the same as those for domestic students.	
2) For students who choose to take six hours of upper division English to satisfy their language requirement, 9 hours of upper division course work in the J. William Fulbright College of Arts and Sciences pertaining to the United States to include any upper division course for American Studies (AMST) listed in the university catalog.	
<b>Junior- senior-level electives within Walton College</b>	13
Maximum of 27 hours of ECON courses in department (core, major, elective). More than 27 hours allowed if the extra courses are part of in- terdisciplinary minor or collateral track.	
General Education Electives	7
<b>Total Degree Requirements</b>	126

**Economics Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The Economics major has two concentrations: Business Economics, and International Economics and Business. The eight-semester plans for both are listed below.

Courses in BOLD must be taken in the designated semester. Courses in ITALIC may be taken in varied sequences as long as other designated requirements for these course are met. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

**Business Economics Concentration**

Fall Semester Year 1	
3	<i>ENGL 1013 Composition I</i> ** – University Core
3	<b>MATH 2053 Finite Math</b> – University Core
3	<b>COMM 1313 Fundamentals of Communication</b>
1	<b>WCOB 1111 Freshman Business Connections</b>
2	WCOB 1012 Legal Environment of Business *
0	WCOB 1120 Computer Competency Requirement
3	<b>U.S. History or Political Science</b> – University Core
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	<i>ENGL 1023 Composition II</i> ** - University Core
3	<b>WCOB 1023 Business Foundations</b>
3	<b>WCOB 1033 Data Analysis and Interpretation</b>
3	<b>ECON 2023 Microeconomics</b> – University Core
4	<i>Natural Science</i> – University Core
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	MATH 2043 Survey of Calculus **
3	<i>ECON 2013 Macroeconomics</i> ** - University Core
6	Select TWO of the following: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
3	<i>Social Science</i> – University Core
3	<i>Fine Art/Humanities</i> – University Core
<b>18</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	<i>Fine Art/Humanities</i> – University Core
4	<i>Natural Science</i> – University Core
3	<i>Business Social Science</i>
6	Select TWO of the following not completed in previous semester: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
<b>16</b>	<b>Semester Hours</b>
ALL pre-business requirements should be met by end of term	
Fall Semester Year 3	
3	ECON 3033 Microeconomic Theory
3	ECON elective
6	WCOB 3016 Business Strategy and Planning
3	Junior Senior Business Elective
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 3	
3	ECON 3133 Macroeconomic Theory
3	ECON 4743 Introduction to Econometrics or ECON 4753 Forecasting
6	Junior Senior Business Electives

3	<i>ENGL 2003 OR ENGL 2013 OR General Education Elective</i> IF Advanced Composition Requirement has already been met ***
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 4	
3	ECON 4333 Economics of Organizations
3	ECON elective
3	Collateral Course
7	<i>General Education Electives</i>
<b>16</b>	<b>Semester hours</b>
Spring Semester Year 4	
3	ECON elective
6	<i>General Education Electives</i>
6	Junior Senior Business Electives
<b>15</b>	<b>Semester hours</b>
<b>126</b>	<b>Total hours</b>

- \* Must be taken prior to fall semester of sophomore year
- \*\* Must be taken prior to fall semester of junior year
- \*\*\* Must be taken prior to fall semester of senior year

**International Economics and Business Concentration**

Fall Semester Year 1	
3	<i>ENGL 1013 Composition I</i> ** – University Core
3	<b>MATH 2053 Finite Math</b> – University Core
3	<b>COMM 1313 Fundamentals of Communication</b>
1	<b>WCOB 1111 Freshman Business Connections</b>
2	WCOB 1012 Legal Environment of Business *
0	<b>WCOB 1120 Computer Competency Requirement</b>
3	<i>Intermediate Foreign Language I (2003 level)</i>
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	<i>ENGL 1023 Composition II</i> ** - University Core
3	<b>WCOB 1023 Business Foundations</b>
3	<b>WCOB 1033 Data Analysis and Interpretation</b>
3	<b>ECON 2023 Microeconomics</b> – University Core
4	<i>Intermediate Foreign Language II (2013 level)</i>
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	MATH 2043 Survey of Calculus **
3	<i>ECON 2013 Macroeconomics</i> ** - University Core
6	Select TWO of the following: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
3	<i>Social Science</i> – University Core
3	<i>U.S. History or Political Science</i>
<b>18</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	<i>Fine Art/Humanities</i> – University Core
4	<i>Natural Science</i> – University Core
3	<i>Business Social Science</i>
6	Select TWO of the following not completed in previous semester: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
<b>16</b>	<b>Semester Hours</b>
ALL pre-business requirements should be met by end of term	
Fall Semester Year 3	
3	ECON 3033 Microeconomic Theory
3	ECON or collateral elective

6	WCOB 3016 Business Strategy and Planning
3	Junior Senior Business Elective
<b>15</b>	<b>Semester hours</b>
<b>Spring Semester Year 3</b>	
3	ECON 3133 Macroeconomic Theory
3	ECON 4633 International Trade Policy
3	Area Studies Course
3	Junior Senior Business Elective
3	ENGL 2003 OR ENGL 2013 OR General Education Elective IF Advanced Composition Requirement has already been met ***
15	Semester hours
<b>Fall Semester Year 4</b>	
3	ECON 4643 International Macroeconomics and Finance
3	International Economics/Business elective
3	Area Studies Course
1	General Education Elective
4	Natural Science – University Core
3	Junior Senior Business Elective
17	Semester hours
<b>Spring Semester Year 4</b>	
3	International Economics/Business elective
3	ECON or collateral elective
3	Area Studies Course
6	Junior Senior Business Electives
<b>15</b>	<b>Semester hours</b>
<b>126</b>	<b>Total hours</b>

\* Must be taken prior to fall semester of sophomore year

\*\* Must be taken prior to fall semester of junior year

\*\*\* Must be taken prior to fall semester of senior year

### Economics Minor for Business Students:

The Department of Economics offers a minor for Walton College students desiring more knowledge of economics to assist them in their business careers. The minor requires completion of 15 hours of study with all of the courses applied toward the minor taken in residence. The 15 hours include the following courses:

ECON 2013 Principles of Macroeconomics

ECON 2023 Principles of Microeconomics

Plus nine hours of upper division course work in economics.

Students who desire to earn an Economics minor must notify the Walton College Undergraduate Programs Office of their intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upper level minor requirements must be taken in residence.

### FINANCE (FINN)

Wayne Y. Lee

Department Chair, 302 WCOB, 479-575-4505

- J.W. Bellamy Chair in Banking and Professor Dominick
- Garrison Chair in Finance and Alice L. Walton Chair in Finance and Professor Lee
- Dillard Department Store Chair in Corporate Finance and Professor Millar
- Harold A. Dulan Finance Chair in Capital Formation and Robert E. Kennedy Chair in Finance and Professor Liu
- Clete and Tammy Brewer Professorship in Business and Associate Professor Rennie

- Arkansas Bankers Association Chair in Banking and Associate Professor Yeager
- Associate Professors Hearth, Jandik
- Assistant Professor Malakhov
- Instructors Driver, Risk

The academic mission of the department of finance is to provide an educational experience that:

- stimulates student learning through open dialogue and informative discussion both inside and outside the classroom;
- actively engages students in their own learning through problem-based casework, participation in real-world business activities, and internships in the financial community; and
- prepares students to successfully meet the rigors of the challenging and diverse career opportunities in finance.

### Finance Major

Students who elect to major in finance can choose from one of five concentrations: banking; financial management/investment; insurance; real estate, and personal financial management. This choice should reflect the student's primary career focus and electives should be used to complement the coursework in the chosen concentration. Careers in finance that are analytically oriented will generally require proficiency in accounting, economics, and quantitative methods. In contrast, careers in finance that are sales or management oriented will generally require marketing and management skills. Finance majors are strongly encouraged to consult with departmental faculty advisers and/or the department chair in developing their curriculum.

### Finance Major Requirements with Concentrations

Complete the requirements for a B.S.B.A. degree as listed on page 209.

**Total General Education** 60

**Walton College Core Requirements** (See page 209) 33

**Course Requirements in the concentration** 24

FINN 3013 Financial Analysis and Valuation 3

FINN 3053 Financial Markets and Institutions 3

FINN 3703 International Finance 3

NOTE: These required courses represent a common body of knowledge for all finance majors and should be taken prior to coursework specified in concentrations within the major.

#### Concentration I: Banking

FINN 3103 Financial Modeling 3

FINN 3133 Commercial Banking 3

FINN 4313 Advanced Commercial Banking Finance or interdisciplinary electives 6

#### Concentration II: Financial Management/Investment

FINN 3103 Financial Modeling 3

Plus one of the following options (six hours):

**Option 1:** Any two of the four courses listed below

FINN 3063 Investments 3

FINN 3603 Corporate Finance 3

FINN 4133 Advanced Investments 3

FINN 4233 Advanced Corporate Finance 3

**Option 2:**

FINN 4143 Portfolio Management I 3

FINN 4153 Portfolio Management II 3

**Option 3:**

FINN 4163 Fixed Income Securities I 3

FINN 4173 Fixed Income Securities II 3



Finance or interdisciplinary electives	6
<b>Concentration III: Insurance</b>	
FINN 3623 Risk Management	3
FINN 4733 Life/Health Insurance I	3
FINN 4833 Property/Casualty Insurance I	3
Finance or interdisciplinary electives	6
<b>Concentration IV: Real Estate</b>	
FINN 3933 Real Estate Principles	3
FINN 4413 Real Estate Investment and Appraisal	3
FINN 4433 Real Estate Finance	3
Finance or interdisciplinary electives	6
<b>Concentration V: Personal Financial Management</b>	
FINN 3003 Personal Financial Management	3
FINN 3063 Investments	3
FINN 3623 Risk Management	3
FINN 4013 Seminar in Financial Planning	3
FINN 4733 Life and Health Insurance I	3

The following courses are strongly recommended for the Personal Financial Management concentration and may be used toward the junior/senior business elective requirements:

ACCT 3843 Fundamentals of Taxation	3
ACCT 5883 Individual Tax Planning	3

The highly recommended courses listed below satisfy the six-credit-hour interdisciplinary requirement in the major:

<b>Accounting</b>	
ACCT 3723 Intermediate Accounting I	3
ACCT 3753 Intermediate Accounting II	3
<b>Economics</b>	
ECON 3733 Experimental Economics	3
<b>Information Systems</b>	
ISYS 2263 Intro to Information Systems Development	3
ISYS 3373 End User Computing	3
<b>Management</b>	
MGMT 4433 Small Enterprise Management	3
MGMT 3933 Entrepreneurship and New Venture Development	3
<b>Marketing</b>	
MKTG 3633 Marketing Research	3
MKTG 3553 Consumer Behavior	3
<b>Transportation and Logistics</b>	
TLOG 3613 Business Logistics	3
TLOG 3623 Purchasing and Inventory Systems	3
<b>Junior- senior-level electives within Walton College</b>	15
Maximum of 27 hours of FINN courses in department (core, major, elective). More than 27 hours allowed if the extra courses are part of interdisciplinary minor or collateral track.	
<b>Total Walton College Requirements</b>	60
<b>Total Degree Requirements</b>	126

**Finance Eight-Semester Degree Program:**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The Finance major has five concentrations:

- Banking
- Insurance
- Financial Management and Investment
- Personal Financial Management
- Real Estate

The eight-semester plan for the each concentration is listed below.

Courses in BOLD must be taken in the designated semester. Courses in ITALIC may be taken in varied sequences as long as other designated requirements for these courses are met. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

**Banking Concentration**

Fall Semester Year 1	
3	<i>ENGL 1013 Composition I</i> ** – University Core
3	<b>MATH 2053 Finite Math</b> – University Core
3	<b>COMM 1313 Fundamentals of Communication</b>
1	<b>WCOB 1111 Freshman Business Connections</b>
2	WCOB 1012 Legal Environment of Business *
0	<b>WCOB 1120 Computer Competency Requirement</b>
3	<i>U.S. History or Political Science</i> – University Core
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	<i>ENGL 1023 Composition II</i> ** - University Core
3	<b>WCOB 1023 Business Foundations</b>
3	<b>WCOB 1033 Data Analysis and Interpretation</b>
3	<b>ECON 2023 Microeconomics</b> – University Core
4	<i>Natural Science</i> – University Core
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	MATH 2043 Survey of Calculus **
3	<i>ECON 2013 Macroeconomics</i> ** - University Core
6	Select TWO of the following: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
3	<i>Social Science</i> – University Core
3	<i>Fine Art/Humanities</i> – University Core
<b>18</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	<i>Fine Art/Humanities</i> – University Core
4	<i>Natural Science</i> – University Core
3	Business Social Science
6	Select TWO of the following not completed in previous semester: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resource</b>
<b>16</b>	<b>Semester Hours</b>
ALL pre-business requirements should be met by end of term	
Fall Semester Year 3	
3	<b>FINN 3013 Financial Analysis and Valuation</b>
3	FINN 3103 Financial Modeling
6	WCOB 3016 Business Strategy and Planning
4	General Education Electives
<b>16</b>	<b>Semester hours</b>
Spring Semester Year 3	
3	FINN 3053 Financial Markets and Institutions
3	<b>FINN 3133 Commercial Banking</b>
6	Junior Senior Business Electives
3	<i>ENGL 2003 or ENGL 2013 or General Education Elective</i> IF Advanced Composition Requirement has already been met***
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 4	
3	FINN 3703 International Finance
3	Finance or Interdisciplinary Electives

6	Junior Senior Business Electives
3	General Education Elective
<b>15</b>	<b>Semester hours</b>
<b>Spring Semester Year 4</b>	
3	<b>FINN 4313 Advanced Commercial Banking</b>
3	Finance or Interdisciplinary Electives
3	Junior Senior Business Elective
6	<b>General Education Electives</b>
<b>15</b>	<b>Semester hours</b>
<b>126</b>	<b>Total hours</b>

**Financial Management and Investment Concentration**

<b>Fall Semester Year 1</b>	
3	<i>ENGL 1013 Composition I**</i> - University Core
3	<b>MATH 2053 Finite Math</b> – University Core
3	<b>COMM 1313 Fundamentals of Communication</b>
1	<b>WCOB 1111 Freshman Business Connections</b>
2	WCOB 1012 Legal Environment of Business*
0	<b>WCOB 1120 Computer Competency Requirement</b>
3	<i>U.S. History or Political Science</i> – University Core
<b>15</b>	<b>Semester hours</b>
<b>Spring Semester Year 1</b>	
3	<i>ENGL 1023 Composition II**</i> - University Core
3	<b>WCOB 1023 Business Foundations</b>
3	<b>WCOB 1033 Data Analysis and Interpretation</b>
3	<b>ECON 2023 Microeconomics</b> – University Core
4	<i>Natural Science</i> – University Core
<b>16</b>	<b>Semester hours</b>
<b>Fall Semester Year 2</b>	
3	MATH 2043 Survey of Calculus**
3	<i>ECON 2013 Macroeconomics**</i> - University Core
6	Select TWO of the following: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
3	<i>Social Science</i> – University Core
3	<i>Fine Art/Humanities</i> – University Core
<b>18</b>	<b>Semester hours</b>
<b>Spring Semester Year 2</b>	
3	<i>Fine Art/Humanities</i> – University Core
3	<i>Business Social Science</i>
4	<i>Natural Science</i> – University Core
6	Select TWO of the following not completed in previous semester: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
<b>16</b>	<b>Semester hours</b>
ALL pre-business requirements should be met by end of term	
<b>Fall Semester Year 3</b>	
3	<b>FINN 3013 Financial Analysis and Valuation</b>
3	FINN 3103 Financial Modeling
6	WCOB 3016 Business Strategy and Planning
3	Junior Senior Business Elective
<b>15</b>	<b>Semester hours</b>
<b>Spring Semester Year 3</b>	
3	FINN 3053 Financial Markets and Institutions
6	Junior Senior Business Electives
3	Finance or Interdisciplinary Elective

3	<i>ENGL 2003 OR ENGL 2013 OR General Education Elective</i> IF Advanced Composition Requirement has already been met***
<b>15</b>	<b>Semester hours</b>
<b>Fall Semester Year 4</b>	
6	Junior Senior Business Electives
7	<i>General Education Electives</i>
3	Finance Option Class****
<b>16</b>	<b>Semester hours</b>
<b>Spring Semester Year 4</b>	
3	FINN 3703 International Finance
3	Finance or interdisciplinary elective
6	<i>General Education Electives</i>
3	Finance option class****
<b>15</b>	<b>Semester hours</b>
<b>126</b>	<b>Total hours</b>

**Insurance Concentration**

<b>Fall Semester Year 1</b>	
3	<i>ENGL 1013 Composition I**</i> - University Core
3	<b>MATH 2053 Finite Math</b> – University Core
3	<b>COMM 1313 Fundamentals of Communication</b>
1	<b>WCOB 1111 Freshman Business Connections</b>
2	WCOB 1012 Legal Environment of Business*
0	<b>WCOB 1120 Computer Competency Requirement</b>
3	<i>U.S. History or Political Science</i> – University Core
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 1</b>	
3	<i>ENGL 1023 Composition II**</i> - University Core
3	<b>WCOB 1023 Business Foundations</b>
3	<b>WCOB 1033 Data Analysis and Interpretation</b>
3	<b>ECON 2023 Microeconomics</b> – University Core
4	<i>Natural Science</i> – University Core
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 2</b>	
3	MATH 2043 Survey of Calculus**
3	<i>ECON 2013 Macroeconomics**</i> - University Core
6	Select TWO of the following: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
3	<i>Social Science</i> – University Core
3	<i>Fine Art/Humanities</i> – University Core
<b>18</b>	<b>Semester Hours</b>
<b>Spring Semester Year 2</b>	
3	<i>Fine Art/Humanities</i> – University Core
4	<i>Natural Science</i> – University Core
3	<i>Business Social Science</i>
6	Select TWO of the following not completed in previous semester: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
<b>16</b>	<b>Semester Hours</b>
ALL pre-business requirements should be met by end of term	
<b>Fall Semester Year 3</b>	
3	<b>FINN 3013 Financial Analysis and Valuation</b>
3	FINN 3623 Risk Management
6	WCOB 3016 Business Strategy and Planning
4	<i>General Education Electives</i>
<b>16</b>	<b>Semester hours</b>

Spring Semester Year 3	
3	FINN 3053 Financial Markets and Institutions
3	<b>FINN 4833 Property and Casualty Insurance I</b>
6	Junior Senior Business Electives
3	<i>ENGL 2003 or ENGL 2013 or General Education Elective</i> IF Advanced Composition Requirement has already been met (3 hours) ***
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 4	
3	FINN 3703 International Finance
3	<b>FINN 4733 Life and Health Insurance I</b>
6	Junior Senior Business Electives
3	<i>General Education Elective</i>
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 4	
6	Finance or Interdisciplinary Electives
3	Junior Senior Business Elective
6	<i>General Education Electives</i>
<b>15</b>	<b>Semester hours</b>
<b>126</b>	<b>Total hours</b>

**Personal Financial Management Concentration**

Fall Semester Year 1	
3	<i>ENGL 1013 Composition I</i> ** – University Core
3	<b>MATH 2053 Finite Math</b> – University Core
3	<b>COMM 1313 Fundamentals of Communication</b>
1	<b>WCOB 1111 Freshman Business Connections</b>
2	WCOB 1012 Legal Environment of Business *
0	<b>WCOB 1120 Computer Competency Requirement</b>
3	<i>U.S. History or Political Science</i> – University Core
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	<i>ENGL 1023 Composition II</i> ** - University Core
3	<b>WCOB 1023 Business Foundations</b>
3	<b>WCOB 1033 Data Analysis and Interpretation</b>
3	<b>ECON 2023 Microeconomics</b> – University Core
4	Natural Science – University Core
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	MATH 2043 Survey of Calculus **
3	<i>ECON 2013 Macroeconomics</i> ** - University Core
6	Select TWO of the following: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
3	<i>Social Science</i> – University Core
3	<i>Fine Art/Humanities</i> – University Core
<b>18</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	<i>Fine Art/Humanities</i> – University Core
4	<i>Natural Science</i> – University Core
3	<i>Business Social Science</i>
6	Select TWO of the following not completed in previous semester: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
<b>16</b>	<b>Semester Hours</b>
ALL pre-business requirements should be met by end of term	
Fall Semester Year 3	
3	<b>ACCT 3723 Intermediate Accounting I</b> (Jr Sr Business elective)

3	<b>FINN 3003 Personal Financial Management</b>
3	<b>FINN 3013 Financial Analysis and Valuation</b>
6	WCOB 3016 Business Strategy and Planning
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 3	
3	<b>ACCT 3843 Fundamentals of Taxation</b> (Jr Sr Business Elective)
3	<b>FINN 3063 Principles of Investments</b>
3	<b>FINN 3623 Risk Management</b>
3	<i>General Education Elective</i>
3	<i>ENGL 2003 or ENGL 2013 or General Education Elective</i> IF Advanced Composition Requirement has already been met ***
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 4	
3	FINN 3703 International Finance
3	<b>FINN 4733 Life and Health Insurance</b>
6	Junior Senior Business Electives
4	<i>General Education Electives</i>
<b>16</b>	<b>Semester hours</b>
Spring Semester Year 4	
3	FINN 3053 Financial Markets and Institutions
3	<b>FINN 4013 Seminar in Financial Planning</b>
3	Junior Senior Business Elective
6	<i>General Education Electives</i>
<b>15</b>	<b>Semester hours</b>
<b>126</b>	<b>Total hours</b>

**Real Estate Concentration**

Fall Semester Year 1	
3	<i>ENGL 1013 Composition I</i> ** – University Core
3	<b>MATH 2053 Finite Math</b> – University Core
3	<b>COMM 1313 Fundamentals of Communication</b>
1	<b>WCOB 1111 Freshman Business Connections</b>
2	WCOB 1012 Legal Environment of Business *
0	<b>WCOB 1120 Computer Competency Requirement</b>
3	<i>U.S. History or Political Science</i> – University Core
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	<i>ENGL 1023 Composition II</i> ** - University Core
3	<b>WCOB 1023 Business Foundations</b>
3	<b>WCOB 1033 Data Analysis and Interpretation</b>
3	<b>ECON 2023 Microeconomics</b> – University Core
4	<i>Natural Science</i> – University Core
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	MATH 2043 Survey of Calculus **
3	<i>ECON 2013 Macroeconomics</i> ** - University Core
6	Select TWO of the following: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
3	<i>Social Science</i> – University Core
3	<i>Fine Art/Humanities</i> – University Core
<b>18</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	<i>Fine Art/Humanities</i> – University Core
4	<i>Natural Science</i> – University Core
3	<i>Business Social Science</i>
6	Select TWO of the following not completed in previous semester: <b>WCOB 2013 Markets and Consumers</b>

WCOB 2023 Production and Delivery of Goods and Services	
WCOB 2033 Acquiring and Managing Human Capital	
WCOB 2043 Acquiring and Managing Financial Resources	
16	Semester Hours
ALL pre-business requirements should be met by end of term	
<b>Fall Semester Year 3</b>	
3	FINN 3013 Financial Analysis and Valuation
3	FINN 3933 Real Estate Principles
6	WCOB 3016 Business Strategy and Planning
4	General Education Electives
16	Semester hours
<b>Spring Semester Year 3</b>	
3	FINN 3053 Financial Markets and Institutions
3	FINN 4433 Real Estate Finance
6	Junior Senior Business Electives
3	ENGL 2003 OR ENGL 2013 OR General Education Elective IF Advanced Composition Requirement has already been met***
15	Semester hours
<b>Fall Semester Year 4</b>	
3	FINN 3703 International Finance
3	FINN 4413 Real Estate Investment and Appraisal
6	Junior Senior Business Electives
3	General Education Elective
15	Semester hours
<b>Spring Semester Year 4</b>	
6	Finance or Interdisciplinary Elective
3	Junior Senior Business Elective
6	General Education Electives
15	Semester hours
126	Semester hours

- \* Must be taken prior to fall semester of sophomore year  
 \*\* Must be taken prior to fall semester of junior year  
 \*\*\* Must be taken prior to fall semester of senior year  
 \*\*\*\* If student selects Option 2 (FINN 4143 and 4153) under the Financial Management concentration, they must take ACCT 3013 as a junior senior business elective in Fall of their junior year, ACCT 3723 as a junior senior business elective in Spring of their junior year, and FINN 3063 as either a junior senior business elective or a finance/interdisciplinary elective in Spring of their junior year. If student selects Option 3 (FINN 4163 and 4173) they must take FINN 3063 as either a junior senior business elective or a finance/interdisciplinary elective in their junior year.

### Finance Minors for Business Students

The Department of Finance offers two minor options for Walton College students in the areas of Banking/Financial Management/ Investment and Insurance/Real Estate. The minors require completion of 15 hours of study with all of the courses applied toward the minor taken in residence. The 15 hours include the following options and courses:

<b>1. Banking/Financial Management/Investment</b>	<b>Hours</b>
FINN 3013 Financial Analysis and Valuation	3
<b>Plus two (six hours) of the following courses</b>	6
FINN 3053 Financial Markets and Institutions	
FINN 3103 Financial Modeling	
FINN 3703 International Finance	
<b>Plus two (six hours) of the following courses</b>	6
FINN 3063 Investments	
FINN 3133 Commercial Banking	
FINN 3603 Corporate Finance	
FINN 4133 Advanced Investment	

FINN 4233 Advanced Corporate Finance  
 FINN 4313 Advanced Commercial Banking

**Total** 15

### 2. Insurance/Real Estate

**Choose any five classes (fifteen hours) of the following courses** 15

FINN 3003 Personal Financial Management  
 FINN 3623 Risk Management  
 FINN 4733 Life and Health Insurance I  
 FINN 4833 Property and Casualty Insurance I  
 FINN 3933 Real Estate Principles  
 FINN 4413 Real Estate Investment and Appraisal  
 FINN 4433 Real Estate Finance

**Total** 15

Students who desire to earn a Finance minor must notify the Walton College Undergraduate Programs Office of their intent to pursue a minor. All requirements for a minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor.

SEE PAGE 347 FOR FINANCE (FINN) COURSES

### INFORMATION SYSTEMS (ISYS)

Moez Limayem

Department Chair, 204 WCOB, 479-575-4500

- David D. Glass Chair in Information Systems and Distinguished Professor Davis (F)
- George and Boyce Billingsley Endowed Chair in Information Systems and Professor Venkatesh
- M.D. Matthews Chair in Information Systems and Professor Cronan
- Edwin and Karlee Bradberry Endowed Chair and Professor Hardgrave
- University Professors Douglas, Jones (T.W.)
- Walton Professorship in Information Systems and Professor Limayem
- Associate Professors Aloysius, O'Leary-Kelly (S.)
- Assistant Professors Maruping, Roberts, Setia
- Instructors Bristow, McDaniel
- Executives in Residence Davis (C.), Mullins

The curriculum in information systems is designed to prepare graduates for careers in solving business problems with applications of computer technology.

Graduates with a degree in Information Systems are sought by hundreds of companies for many different types of positions, such as programmer, analyst, database administrator, and web developer, among others. Graduates are now programming, analyzing and designing systems, consulting, teaching, and solving business problems across the country.

### Information Systems Major Requirements

The major in Information Systems requires 24 hours of major and collateral courses in the discipline as well as satisfying the other requirements for the B.S.B.A. degree. A maximum of 27 hours is allowed in a WCOB major or discipline field of study (i.e., core, major, electives) unless the extra courses are part of an interdisciplinary minor. The Information Systems department encourages its majors to seek an interdisciplinary minor. See an adviser for selection of courses.

NOTE: Course requirements in the Information Systems major total 24 credit hours. Because of prerequisites, students should allow two full years (24 months) to complete this coursework. Prerequisites are strictly enforced.

Complete the requirements for a B.S.B.A. degree as listed on page 209. Programming I (CSCE 2003/2001L) is recommended as a general education elective.	<b>Hours</b>
<b>Total General Education</b>	60
<b>Walton College Core Requirements</b> (See page 209)	33
<b>Course Requirements in the Major for All Concentrations</b>	18
ISYS 2263 Intro. to IS Development	3
ISYS 3293 System Analysis and Design	3
ISYS 3393 Business Applications in Visual Basic	3
ISYS 4283 Centralized Data Systems	3
ISYS 4363 Business Application Systems Development	3
ISYS 4213 ERP Fundamentals	3
<b>Note: These required courses represent a common body of knowledge for all information systems majors. Majors must select one of the following concentrations and must complete six additional hours of coursework in the elected concentration.</b>	
Concentration I: Enterprise Resource Planning WCOB 4223 ERP Configuration and Implementation ISYS 4233 ERP Development	6
Concentration II: Enterprise Systems ISYS 4453 Introduction to Enterprise Servers ISYS 4463 Enterprise Transaction Systems	
Concentration III: IT Applications Management ISYS 4243 Current Topics in Computer Information ISYS 4373 Application Development with Java	
<b>Junior- senior-level electives or interdisciplinary minor within Walton College</b>	15
Maximum of 27 hours of ISYS courses in department (core, major, elective). More than 27 hours allowed if the extra courses are part of interdisciplinary minor or collateral track.	
<b>Total Walton College Requirements</b>	60
<b>Total Degree Requirements</b>	126

**Information Systems Eight-Semester Degree Program:**

Students wishing to follow the eight-semester degree plan for Information Systems should see page 42 in the Academic Regulations chapter for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Courses in ITALIC may be taken in varied sequences as long as other designated requirements for these courses are met. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

Fall Semester Year 1	
3	<i>ENGL 1013 Composition I</i> ** - University Core
3	<b>MATH 2053 Finite Math</b> – University Core
3	<b>COMM 1313 Fundamentals of Communication</b>
1	<b>WCOB 1111 Freshman Business Connections</b>
2	WCOB 1012 Legal Environment of Business *
0	<b>WCOB 1120 Computer Competency Requirement</b>
3	<i>U.S. History or Political Science</i> – University Core
15	Semester hours
Spring Semester Year 1	
3	<i>ENGL 1023 Composition II</i> ** - University Core
3	<b>WCOB 1023 Business Foundations</b>
3	<b>WCOB 1033 Data Analysis and Interpretation</b>
3	<b>ECON 2023 Microeconomics</b> – University Core
4	<i>Natural Science</i> – University Core
16	Semester hours

Fall Semester Year 2	
3	MATH 2043 Survey of Calculus **
3	<i>ECON 2013 Macroeconomics</i> ** - University Core
6	Select TWO of the following: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
3	<i>Fine Art/Humanities</i> – University Core
3	<i>Social Science</i> – University Core
18	Semester hours
Spring Semester Year 2	
3	<i>Fine Art/Humanities</i> – University Core
4	<i>Natural Science</i> – University Core
3	<b>ISYS 2263 Intro to Information Systems Development</b>
6	Select TWO of the following not completed in previous semester: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
16	Semester hours
ALL pre-business requirements should be met by end of term	
Fall Semester Year 3	
3	<b>ISYS 3293 Systems Analysis and Design</b>
3	Junior Senior Business Electives
6	WCOB 3016 Business Strategy and Planning
3	<i>Business Social Science</i>
15	Semester hours
Spring Semester Year 3	
3	<b>ISYS 3393 Business Application Dev. in the Visual Basic Environment</b>
3	<b>WCOB 4213 ERP Fundamentals</b>
6	Junior Senior Business Electives
3	ENGL 2003 OR ENGL 2013 OR General Education Elective IF Advanced Composition Requirement has already been met ***
15	Semester hours
Fall Semester Year 4	
3	<b>ISYS 4283 Centralized Database Systems</b>
3	<b>WCOB 4223 ERP Configuration and Implementation</b>
7	<i>General Education Electives</i>
3	Junior Senior Business Electives
16	Semester hours
Spring Semester Year 4	
3	<b>ISYS 4233 Business Project Development</b>
3	<b>WCOB 4233 ERP Development</b>
6	<i>General Education Electives</i>
3	Junior Senior Business Elective
15	Semester hours
126	Total hours

- \* Must be taken prior to fall semester of sophomore year
- \*\* Must be taken prior to fall semester of junior year
- \*\*\* Must be taken prior to fall semester of senior year

**Information Systems Minor for Business Students:**

The Department of Information Systems offers a minor for Walton College students desiring more knowledge of information systems to assist them in their careers. The minor requires completion of 15 hours of study with all of the courses applied toward the minor in residence. The 15 hours include the following courses:

- ISYS 2263 Intro. to Information Systems Development
- ISYS 3253 IT Infrastructure
- ISYS 3293 System Analysis and Design

ISYS 3393 Business Applications and Visual Basic

Plus one of the following:

ISYS 4373 Object Oriented Programming

ISYS 4283 Centralized Data Systems

ISYS 4293 Business Intelligence

WCOB 4213 ERP Fundamentals

Students who desire to earn an Information Systems minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor.

SEE PAGE 360 FOR INFORMATION SYSTEMS (ISYS) COURSES

## MANAGEMENT (MGMT)

Anne O'Leary-Kelly

Department Chair, 402 WCOB, 479-575-4566

- Charles C. Fichtner Chair in Management and Professor Ganster
- Raymond F. Orr Chair and Professor Gupta
- William R. and Cacia Howard Chair and Professor O'Leary-Kelly (A.)
- University Professor White
- Walton Professorship in Sustainability and Professor Johnson
- Sam M. Walton Leadership Chair and Professor Worrell
- Professor Delery
- Cecil and Gwendolyn Cupp Applied Professorship in Entrepreneurship and Associate Professor Reeves
- Associate Professors Anand, Ellstrand
- Assistant Professors Nag, Rosen
- Instructors Newman, Pullen

Management is the force responsible for directing organizations toward goals or objectives. Therefore, the management curriculum focuses on the nature and capabilities of human and other resources, as well as how the manager plans, organizes, staffs, coordinates, and evaluates those resources in an organization and its environment. The study of management prepares men and women for positions of leadership in profit and nonprofit organizations of all sizes. Management majors gain insight and skill needed for careers as professional managers or as self-employed entrepreneurs. These skills include technical knowledge, communicative capacity, human understanding, and conceptual and problem-solving ability. Two majors are offered in the management department: management and general business. Both majors are described below.

### Management Major

Students may choose from among three concentrations: Human Resource Management, Small Business and Entrepreneurship, and Organizational Leadership. All management majors must complete MGMT 4243 Ethics and Corporate Responsibility. An additional 21 hours of credit are required for students majoring in management. Six of these credit hours are specified in the concentration. Beyond this, students can choose from specified management and non-management courses in order to complete the requirements for the major.

The Human Resource Management concentration is designed to prepare students for careers in human resource-related occupations. Among issues and areas addressed are management-employee relations, quality of work life, compensation and other reward systems, organizational staffing, and training and development. The Human Resource Management track emphasizes the importance of integrating individual goals and organizational objectives.

The Small Business and Entrepreneurship concentration is suggested for

students who are interested in starting and/or operating a small business or independent company after graduation. The Small Business and Entrepreneurship focus provides excellent preparation for students wishing to obtain a highly integrated view of business operations. The Organizational Leadership concentration prepares new students for leadership positions within organizations. Among the topics explored are employee motivation, how to manage power and influence within organizations, developing effective teams, managing diversity, organizational transformation and change, and globalization.

### Management Major Requirements

The major in management requires 24 hours of major and collateral courses in the discipline as well as satisfying the other requirements for the B.S.B.A. degree. A maximum of 27 hours is allowed in a WCOB major or discipline field of study (i.e., core, major, electives) unless the extra courses are part of an interdisciplinary minor or collateral track. See an adviser for selection of courses.

Complete the requirements for a B.S.B.A. degree as listed on page 209.	<b>Hours</b>
<b>Total General Education</b>	60
<b>College Core Requirements</b>	33
<b>Courses Required</b>	24
<b>Concentration I: Human Resources Management</b>	
MGMT 4943 Organizational Staffing	3
MGMT 4953 Organizational Rewards/Compensation	3
MGMT 4243 Ethics and Corporate Responsibility	3
Select at least two classes (six hours) from the following courses:	6
MGMT 4253 Leadership	
MGMT 4263 Organizational Change and Development	
MGMT 3933 Entrepreneurship/New Venture	
MGMT 4103 Special Topics	
MGMT 4433 Small Enterprise Management	
MGMT 4583 International Management	
MGMT 4993 Entrepreneurship Practicum	
Select up to three classes (nine hours) from the following courses:	9
ECON 3533 Labor Economics	
ECON 4333 Managerial Economics	
ACCT 3613 Managerial Uses of Accounting Information	
ISYS 2263 Introduction to Information Systems	
ISYS 3373 End User Computing	
ISYS 4263 Information Technology Strategy	
MKTG 3553 Consumer Behavior	
MKTG 3633 Marketing Research	
MKTG 4533 Marketing Management	
<b>Concentration II: Organizational Leadership</b>	
MGMT 4253 Leadership	3
MGMT 4263 Organizational Change and Development	3
MGMT 4243 Ethics and Corporate Responsibility	3
Select at least two classes (six hours) from the following courses:	6
MGMT 3933 Entrepreneurship/New Venture	
MGMT 4103 Special Topics	
MGMT 4433 Small Enterprise Management	
MGMT 4583 International Management	
MGMT 4943 Organizational Staffing	
MGMT 4953 Organizational Rewards/Compensation	

Select up to three classes (nine hours) from the following courses: 9

- ACCT 3613 Managerial Uses of Accounting
- ACCT 3723 Intermediate Accounting I
- ECON 3533 Labor Economics
- ECON 4333 Managerial Economics
- ECON 4643 International Macroeconomics and Finance
- ECON 4653 Global Competition and Strategy
- FINN 3603 Intermediate Financial Management
- FINN 3703 International Finance
- ISYS 2263 Introduction to Information Systems
- ISYS 4263 Information Technology Strategy
- ISYS 4933 Global Information Technology Management
- MKTG 4533 Marketing Management
- MKTG 4633 Global Marketing
- TLOG 3613 Business Logistics
- TLOG 4643 International Transportation and Logistics
- TLOG 4653 Transportation and Logistics Strategy

**Concentration III: Small Business and Entrepreneurship**

**Required courses:**

- MGMT 3933 Entrepreneurship/New Venture 3
- MGMT 4243 Ethics and Corporate Responsibility 3
- MGMT 4433 Small Enterprise Management 3

Select at least two classes (six hours) from the following courses: 6

- MGMT 4103 Special Topics
- MGMT 4253 Leadership
- MGMT 4263 Organizational Change and Development
- MGMT 4433 Small Enterprise Management
- MGMT 4583 International Management
- MGMT 4943 Organizational Staffing
- MGMT 4953 Organizational Rewards/Compensation

Select up to three classes (nine hours) from the following courses: 9

- ACCT 3613 Managerial Uses of Accounting
- ACCT 3723 Intermediate Accounting I
- ACCT 3843 Fundamentals of Taxation
- BLAW 3033 Commercial Law
- FINN 3053 Financial Markets and Institutions
- FINN 3623 Risk Management
- FINN 3933 Real Estate Principles
- ISYS 2263 Introduction to Information Systems
- MKTG 4233 Integrated Marketing Communications
- MKTG 4343 Selling and Sales Management
- MKTG 3553 Consumer Behavior
- MKTG 4633 Global Marketing
- MKTG 4433 Retail Strategies
- TLOG 3613 Business Logistics
- TLOG 3623 Purchasing and Inventory Systems
- TLOG 4653 Transportation and Logistics Strategy

**Junior- senior-level electives within Walton College** 15

Maximum of 27 hours of MGMT courses in department (core, major, elective). More than 27 hours allowed if the extra courses are part of interdisciplinary minor or collateral track.

**Total College Requirements** 60

**Total Degree Requirements** 126

**Management Eight-Semester Degree Program:**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

The Management major has three concentrations:

- Human Resources Management
- Organizational Leadership
- Small Business and Entrepreneurship

The eight-semester plan for each concentration is listed below.

Courses in **BOLD** must be taken in the designated semester. Courses in *ITALIC* may be taken in varied sequences as long as other designated requirements for these courses are met. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

**Human Resources Management Concentration**

Fall Semester Year 1	
3	<i>ENGL 1013 Composition I</i> ** – University Core
3	<b>MATH 2053 Finite Math</b> – University Core
3	<b>COMM 1313 Fundamentals of Communication</b>
1	<b>WCOB 1111 Freshman Business Connections</b>
2	WCOB 1012 Legal Environment of Business *
0	<b>WCOB 1120 Computer Competency Requirement</b>
3	<i>U.S. History or Political Science</i> – University Core
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	<i>ENGL 1023 Composition II</i> ** - University Core
3	<b>WCOB 1023 Business Foundations</b>
3	<b>WCOB 1033 Data Analysis and Interpretation</b>
3	<b>ECON 2023 Microeconomics</b> – University Core
4	<i>Natural Science</i> – University Core
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	MATH 2043 Survey of Calculus **
3	<i>ECON 2013 Macroeconomics</i> ** - University Core
6	Select TWO of the following: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
3	<i>Social Science</i> – University Core
3	<i>Fine Art/Humanities</i> – University Core
<b>18</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	<i>Fine Art/Humanities</i> – University Core
4	<i>Natural Science</i> – University Core
3	<i>Business Social Science</i>
6	Select TWO of the following not completed in previous semester: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
<b>16</b>	<b>Semester Hours</b>
ALL pre-business requirements should be met by end of term	
Fall Semester Year 3	
3	<i>MGMT 4243 Ethics and Corporate Responsibility</i> or <i>MGMT 4953 Organizational Rewards</i>
3	<i>MGMT 4943 Organizational Staffing</i>
6	<i>WCOB 3016 Business Strategy and Planning</i>
3	Junior Senior Business Elective
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 3	
3	<i>MGMT 4953 Organizational Rewards and Compensation</i> or <i>MGMT 4993 Organizational Staffing</i>
6	<i>MGMT</i> or <i>Collateral electives</i>

3	Junior Senior Business Elective
3	<i>ENGL 2003 or ENGL 2013 or General Education Elective</i> IF Advanced Composition Requirement has already been met***
<b>15</b>	<b>Semester hours</b>
<b>Fall Semester Year 4</b>	
6	MGMT electives
3	Junior Senior Business Elective
7	<i>General Education Electives</i>
<b>16</b>	<b>Semester hours</b>
<b>Spring Semester Year 4</b>	
3	MGMT or collateral elective
6	Junior Senior Business Electives
6	<i>General Education Electives</i>
<b>15</b>	<b>Semester hours</b>
<b>126</b>	<b>Total hours</b>

### Organizational Leadership Concentration

<b>Fall Semester Year 1</b>	
3	<i>ENGL 1013 Composition I</i> ** – University Core
3	<b>MATH 2053 Finite Math</b> – University Core
3	<b>COMM 1313 Fundamentals of Communication</b>
1	<b>WCOB 1111 Freshman Business Connections</b>
2	WCOB 1012 Legal Environment of Business *
0	<b>WCOB 1120 Computer Competency Requirement</b>
3	<i>U.S. History or Political Science</i> – University Core
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 1</b>	
3	<i>ENGL 1023 Composition II</i> ** - University Core
3	<b>WCOB 1023 Business Foundations</b>
3	<b>WCOB 1033 Data Analysis and Interpretation</b>
3	<b>ECON 2023 Microeconomics</b> – University Core
4	<i>Natural Science</i> – University Core
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 2</b>	
3	MATH 2043 Survey of Calculus **
3	<i>ECON 2013 Macroeconomics</i> ** - University Core
6	Select TWO of the following: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
3	<i>Social Science</i> – University Core
3	<i>Fine Art/Humanities</i> – University Core
<b>18</b>	<b>Semester Hours</b>
<b>Spring Semester Year 2</b>	
3	<i>Fine Art/Humanities</i> – University Core
4	<i>Natural Science</i> – University Core
3	<i>Business Social Science</i>
6	Select TWO of the following not completed in previous semester: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
<b>16</b>	<b>Semester Hours</b>
ALL pre-business requirements should be met by end of term	
<b>Fall Semester Year 3</b>	
3	MGMT 4243 Ethics and Corporate Responsibility
3	MGMT 4253 Organizational Leadership
6	WCOB 3016 Business Strategy and Planning
3	Junior Senior Business Elective
<b>15</b>	<b>Semester hours</b>
<b>Spring Semester Year 3</b>	

3	MGMT 4263 Organizational Change and Development
6	MGMT or Collateral electives
3	Junior Senior Business Elective
3	<i>ENGL 2003 or ENGL 2013 or General Education Elective</i> IF Advanced Composition Requirement has already been met ***
<b>15</b>	<b>Semester hours</b>
<b>Fall Semester Year 4</b>	
6	MGMT electives
3	Junior Senior Business Elective
7	General Education Electives
<b>16</b>	<b>Semester hours</b>
<b>Spring Semester Year 4</b>	
3	MGMT or collateral elective
6	Junior Senior Business Electives
6	<i>General Education Electives</i>
<b>15</b>	<b>Semester hours</b>
<b>126</b>	<b>Total hours</b>

### Small Business and Entrepreneurship Concentration

<b>Fall Semester Year 1</b>	
3	<i>ENGL 1013 Composition I</i> ** – University Core
3	<b>MATH 2053 Finite Math</b> – University Core
3	<b>COMM 1313 Fundamentals of Communication</b>
1	<b>WCOB 1111 Freshman Business Connections</b>
2	WCOB 1012 Legal Environment of Business *
0	<b>WCOB 1120 Computer Competency Requirement</b>
3	<i>U.S. History or Political Science</i> – University Core
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 1</b>	
3	<i>ENGL 1023 Composition II</i> ** - University Core
3	<b>WCOB 1023 Business Foundations</b>
3	<b>WCOB 1033 Data Analysis and Interpretation</b>
3	<b>ECON 2023 Microeconomics</b> – University Core
4	<i>Natural Science</i> – University Core
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 2</b>	
3	MATH 2043 Survey of Calculus **
3	<i>ECON 2013 Macroeconomics</i> ** - University Core
6	Select TWO of the following: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
3	<i>Social Science</i> – University Core
3	<i>Fine Art/Humanities</i> – University Core
<b>18</b>	<b>Semester Hours</b>
<b>Spring Semester Year 2</b>	
3	<i>Fine Art/Humanities</i> – University Core
4	<i>Natural Science</i> – University Core
3	<i>Business Social Science</i>
6	Select TWO of the following not completed in previous semester: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
<b>16</b>	<b>Semester Hours</b>
ALL pre-business requirements should be met by end of term	
<b>Fall Semester Year 3</b>	
3	MGMT 3933 Entrepreneurship and New Venture Development
3	MGMT 4243 Ethics and Corporate Responsibility
6	WCOB 3016 Business Strategy and Planning



3	Junior Senior Business Elective
<b>15</b>	<b>Semester hours</b>
<b>Spring Semester Year 3</b>	
3	MGMT 4433 Small Enterprise Management
6	MGMT or Collateral electives
3	Junior Senior Business Elective
3	ENGL 2003 or ENGL 2013 or General Education Elective IF Advanced Composition Requirement has already been met ***
<b>15</b>	<b>Semester hours</b>
<b>Fall Semester Year 4</b>	
6	MGMT electives
3	Junior Senior Business Elective
7	General Education Electives
<b>16</b>	<b>Semester hours</b>
<b>Spring Semester Year 4</b>	
3	MGMT or collateral elective
6	Junior Senior Business Electives
6	General Education Electives
<b>15</b>	<b>Semester hours</b>
<b>126</b>	<b>Total hours</b>

- \* Must be taken prior to fall semester of sophomore year
- \*\* Must be taken prior to fall semester of junior year
- \*\*\* Must be taken prior to fall semester of senior year

**Management Minor for Business Students:**

The Department of Management offers a minor for students desiring more knowledge of management to assist them in their careers. The minor requires completion of 15 hours of study with all of the courses applied toward the minor in residence. The 15 hours include the following courses:

- MGMT 4243 Ethics and Corporate Responsibility
- Plus 12 hours from the following courses:
- MGMT 3933 Entrepreneurship/New Venture
- MGMT 4103 Special Topics
- MGMT 4253 Leadership
- MGMT 4263 Organizational Change and Development
- MGMT 4433 Small Enterprise Management
- MGMT 4583 International Management
- MGMT 4943 Organizational Staffing
- MGMT 4953 Organizational Rewards/Compensation
- MGMT 4993 Entrepreneurship Practicum

Students who desire to earn a Management minor must notify the Walton College Undergraduate Programs Office of intent to pursue the minor. All requirements for the minor must be completed prior to the awarding of a student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upper level requirements must be taken in residence.

**General Business Major**

General Business is the broadest major in Walton College. This program provides the student exposure to all facets of the business process. Maximum flexibility is retained by the student. At the same time, careful use of general and junior/senior business electives allows the student to concentrate additional coursework in one or more selected functional areas.

**General Business Major Requirements**

Complete the requirements for a B.S.B.A. degree as listed on page 209.	<b>Hours</b>
<b>Total General Education</b>	<b>60</b>

<b>Walton College Core Requirements Core Requirements</b>	<b>33</b>
(See page 209)	
<b>Course Requirements in the Major</b>	<b>24</b>
Select one from each of the following six groups. Sequencing of courses will be determined by choices made.	
<b>Group 1</b>	
MGMT 3933 Entrepreneurship/New Venture	3
MGMT 4243 Ethics and Corporate Responsibility	3
MGMT 4253 Leadership	3
MGMT 4263 Organizational Change and Development	3
MGMT 4433 Small Enterprise Development	3
MGMT 4943 Organizational Staffing	3
MGMT 4953 Orgn Rewards/Compensation	3
<b>Group 2</b>	
ACCT 3533 Accounting Technology	3
ACCT 3613 Managerial Uses of Accounting Information	3
ACCT 3723 Intermediate Accounting I	3
ACCT 3753 Intermediate Accounting II	3
<b>Group 3</b>	
WCOB 4213 ERP Fundamentals	3
ISYS 2263 Introduction to Information Systems	3
ISYS 4263 IT Strategy	3
ISYS 4933 Global IT	3
<b>Group 4</b>	
ECON 3033 Microeconomics Theory	3
ECON 3133 Macroeconomics Theory	3
ECON 3533 Labor Economics	3
ECON 4333 Economics of Organizations	3
ECON 4633 International Trade	3
ECON 4643 International Macroeconomics and Finance	3
ECON 4653 Global Competition and Strategy	3
<b>Group 5</b>	
FINN 3053 Financial Markets/Institutions	3
FINN 3063 Principles of Investments	3
FINN 3623 Risk Management	3
FINN 4233 Advanced Corporate Finance	3
<b>Group 6</b>	
MKTG 4233 Integrated Marketing Communication	3
MKTG 3553 Consumer Behavior	3
MKTG 4433 Retail Strategy	3
Six hours 3000/4000 business courses	6
<b>Junior- senior-level electives within Walton College</b>	<b>15</b>
Maximum of 27 hours of courses in any one de-partment (core, major, elective). More than 27 hours allowed if the extra courses are part of inter-disciplinary minor or collateral track.	
<b>Total Walton College Requirements</b>	<b>60</b>
<b>Total Degree Requirements</b>	<b>126</b>

**General Business Eight-Semester Degree Program:**

Students wishing to follow the eight-semester degree plan for General Business should see page 42 in the Academic Regulations chapter for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Courses in ITALIC may be taken in varied sequences as long as other designated requirements for these courses are met. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

Fall Semester Year 1	
3	<i>ENGL 1013 Composition I</i> ** - University Core
3	<b>MATH 2053 Finite Math</b> – University Core
3	<b>COMM 1313 Fundamentals of Communication</b>
1	<b>WCOB 1111 Freshman Business Connections</b>
2	WCOB 1012 Legal Environment of Business *
0	<b>WCOB 1120 Computer Competency Requirement</b>
3	<i>U.S. History or Political Science</i> – University Core
15	<b>Semester Hours</b>
Spring Semester Year 1	
3	<i>ENGL 1023 Composition II</i> ** - University Core
3	<b>WCOB 1023 Business Foundations</b>
3	<b>WCOB 1033 Data Analysis and Interpretation</b>
3	<b>ECON 2023 Microeconomics</b> – University Core
4	<i>Natural Science</i> – University Core
16	<b>Semester Hours</b>
Fall Semester Year 2	
3	MATH 2043 Survey of Calculus **
3	<i>ECON 2013 Macroeconomics</i> ** - University Core
6	Select TWO of the following: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
3	<i>Social Science</i> – University Core
3	<i>Fine Art/Humanities</i> – University Core
18	<b>Semester Hours</b>
Spring Semester Year 2	
3	<i>Fine Art/Humanities</i> – University Core
4	<i>Natural Science</i> – University Core
3	<i>Business Social Science</i>
6	Select TWO of the following not completed in previous semester: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
16	<b>Semester Hours</b>
ALL pre-business requirements should be met by end of term	
Fall Semester Year 3	
3	Group 1 course (see above)
3	Group 2 course (see above)
6	WCOB 3016 Business Strategy and Planning
3	<b>MKTG 3433</b> (Junior Senior Business Elective)
15	<b>Semester hours</b>
Spring Semester Year 3	
3	Group 3 course (see above)
3	Group 6 course (see above)
6	Junior Senior Business Electives
3	<i>ENGL 2003 or ENGL 2013 or General Education Elective</i> IF Advanced Composition Requirement has already been met***
15	<b>Semester hours</b>
Fall Semester Year 4	
3	Group 5 course (see above)
6	Junior Senior Business Electives
7	<i>General Education Electives</i>
15	<b>Semester hours</b>
Spring Semester Year 4	
3	Group 4 course (see above)
6	<i>General Education Electives</i>
6	Junior Senior Business Elective
15	<b>Semester hours</b>
126	<b>Total hours</b>

\* Must be taken prior to fall semester of sophomore year

\*\* Must be taken prior to fall semester of junior year

\*\*\* Must be taken prior to fall semester of senior year

SEE PAGE 371 FOR MANAGEMENT (MGMT) COURSES

## MARKETING AND LOGISTICS (MKTL)

Thomas D. Jensen,

Department Chair, 302 WCOB, 479-575-4055

- R.A. and Vivian Young Chair and Distinguished Professor Kurtz
- Wal-Mart Chair of Marketing and Professor Burton
- Wal-Mart Lecturer in Retailing and Professor Jensen (T.)
- Oren Harris Chair of Transportation and Professor Ozment
- Garrison Chair in Supply Chain Management and Professor Waller
- Professors Howlett, Murray
- Associate Professors Ashton, Kopp, Rapert, Stassen
- Assistant Professors Eroglu, Hofer (C.), Smith (R.)
- Visiting Assistant Professors Hofer (A.), Jensen (M.)
- Instructors Cole, Cox

The department of marketing and logistics offers two majors:

- 1) marketing
- 2) transportation and logistics

Descriptions of the marketing major and courses follow. The transportation and logistics major is described in the next section.

### Marketing Major

The major in marketing requires 24 hours of major and collateral courses in the discipline as well as satisfying the other requirements for the B.S.B.A. degree. A maximum of 27 hours is allowed in a WCOB major or discipline field of study (i.e., core, major, electives) unless the extra courses are part of an interdisciplinary minor or collateral track. See an adviser for selection of courses.

The major in marketing is designed to prepare students for careers involving product planning, distribution, promotion, and pricing strategies in profit or nonprofit organizations. In addition to a broad overview of the marketing functions within organizations, students are provided with knowledge and skills in consumer behavior, marketing research, and strategic marketing. Students majoring in marketing are actively subjected to problem-solving situations, both domestic and international, where a variety of contemporary tools are employed to stimulate the strategic decision-making process. Supportive disciplines with which the marketer should be familiar include psychology, sociology, accounting, economics, statistics, quantitative analysis, and research methodology.

The marketing major has two concentrations to select from: marketing management and retail marketing. The marketing management concentration is intended to provide students with broad knowledge and skills in marketing applicable to industry. The retail marketing concentration prepares students for marketing careers in the retail industry.

### Marketing Major Requirements

Complete the requirements for a B.S.B.A. degree as listed on page 209. **Hours**

<b>Total General Education</b>	60
<b>Walton College Core Requirements</b> (See page 209)	33
<b>Course Requirements in All Concentrations</b>	24
MKTG 3433 Introduction to Marketing Strategy	3
MKTG 3553 Consumer Behavior	3
MKTG 3633 Marketing Research	3

MKTG 4533 Marketing Management	3
Majors must select one of the following concentrations and must complete twelve hours of course work in the elected concentration.	
<b>Concentration I: Marketing Management</b>	
Select twelve hours from the following:	
MKTG 4233 Integrated Marketing Communications	3
MKTG 4343 Selling and Sales Management	3
MKTG 4103 Marketing Topics	3
MKTG 4633 Global Marketing	3
MKTG 4433 Retail Strategy	3
MKTG 4443 Retail Buying and Merchandise	3
<b>Concentration II: Retail Marketing</b>	
MKTG 4433 Retail Strategy	3
MKTG 4443 Retail Buying and Merchandise	3
Select two courses (six hours) from the following:	
MKTG 4233 Integrated Marketing Communications	3
MKTG 4343 Selling and Sales Management	3
MKTG 4103 Marketing Topics	3
MKTG 4633 Global Marketing	3
<b>Junior- senior-level electives within Walton College</b>	15
Maximum of 27 hours of MKTG courses in department (core, major, elective). More than 27 hours allowed if the extra courses are part of interdisciplinary minor or collateral track.	
<b>Total Walton College Requirements</b>	60
<b>Total Degree Requirements</b>	126

**Marketing Eight-Semester Degree Program:**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. The marketing major has two concentrations: marketing management and retail marketing. The eight-semester plans for both are listed below.

Courses in BOLD must be taken in the designated semester. Courses in ITALIC may be taken in varied sequences as long as other designated requirements for these courses are met. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

**Marketing Management Concentration**

Fall Semester Year 1	
3	<i>ENGL 1013 Composition I</i> ** - University Core
3	<b>MATH 2053 Finite Math</b> - University Core
3	<b>COMM 1313 Fundamentals of Communication</b>
1	<b>WCOB 1111 Freshman Business Connections</b>
2	WCOB 1012 Legal Environment of Business *
0	<b>WCOB 1120 Computer Competency Requirement</b>
3	<i>U.S. History or Political Science</i> - University Core
15	<b>Semester Hours</b>
Spring Semester Year 1	
3	<i>ENGL 1023 Composition II</i> ** - University Core
3	<b>WCOB 1023 Business Foundations</b>
3	<b>WCOB 1033 Data Analysis and Interpretation</b>
3	<b>ECON 2023 Microeconomics</b> - University Core
4	<i>Natural Science</i> - University Core
16	<b>Semester Hours</b>
Fall Semester Year 2	
3	MATH 2043 Survey of Calculus **
3	<i>ECON 2013 Macroeconomics</i> ** - University Core

6	Select TWO of the following: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
3	<i>Social Science</i> - University Core
3	<i>Fine Art/Humanities</i> - University Core
18	<b>Semester Hours</b>
Spring Semester Year 2	
3	<i>Fine Art/Humanities</i> - University Core
4	<i>Natural Science</i> - University Core
3	<i>Business Social Science</i>
6	Select TWO of the following not completed in previous semester: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
16	<b>Semester Hours</b>
ALL pre-business requirements should be met by end of term	
Fall Semester Year 3	
3	<b>MKTG 3433 Introduction to Marketing Strategy</b>
6	WCOB 3016 Business Strategy and Planning
6	Junior Senior Business Electives
15	<b>Semester hours</b>
Spring Semester Year 3	
3	<b>MKTG 3633 Marketing Research</b>
3	MKTG elective
6	Junior Senior Business Electives
3	<i>ENGL 2003 or ENGL 2013 or General Education Elective</i> IF Advanced Composition Requirement has already been met***
15	<b>Semester hours</b>
Fall Semester Year 4	
3	<b>MKTG 3553 Consumer Behavior</b>
6	MKTG electives
7	<i>General Education Electives</i>
16	<b>Semester hours</b>
Spring Semester Year 4	
3	<b>MKTG 4533 Marketing Management</b>
3	MKTG elective
3	Junior Senior Business Elective
6	<i>General Education Electives</i>
15	<b>Semester hours</b>
126	<b>Total hours</b>

**Retail Marketing Concentration**

Fall Semester Year 1	
3	<i>ENGL 1013 Composition I</i> ** - University Core
3	<b>MATH 2053 Finite Math</b> - University Core
3	<b>COMM 1313 Fundamentals of Communication</b>
1	<b>WCOB 1111 Freshman Business Connections</b>
2	WCOB 1012 Legal Environment of Business *
0	<b>WCOB 1120 Computer Competency Requirement</b>
3	<i>U.S. History or Political Science</i> - University Core
15	<b>Semester Hours</b>
Spring Semester Year 1	
3	<i>ENGL 1023 Composition II</i> ** - University Core
3	<b>WCOB 1023 Business Foundations</b>
3	<b>WCOB 1033 Data Analysis and Interpretation</b>
3	<b>ECON 2023 Microeconomics</b> - University Core

4	<i>Natural Science</i> – University Core
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 2</b>	
3	MATH 2043 Survey of Calculus **
3	ECON 2013 Macroeconomics ** - University Core
6	Select TWO of the following: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
3	<i>Social Science</i> – University Core
3	<i>Fine Art/Humanities</i> – University Core
<b>18</b>	<b>Semester Hours</b>
<b>Spring Semester Year 2</b>	
3	<i>Fine Art/Humanities</i> – University Core
4	<i>Natural Science</i> – University Core
3	<i>Business Social Science</i>
6	Select TWO of the following not completed in previous semester: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
<b>16</b>	<b>Semester Hours</b>
ALL pre-business requirements should be met by end of term	
<b>Fall Semester Year 3</b>	
3	<b>MKTG 3433 Introduction to Marketing Strategy</b>
6	WCOB 3016 Business Strategy and Planning
6	Junior Senior Business Electives
<b>15</b>	<b>Semester hours</b>
<b>Spring Semester Year 3</b>	
3	<b>MKTG 3633 Marketing Research</b>
3	<b>MKTG 4433 Retail Strategy</b>
6	Junior Senior Business Electives
3	ENGL 2003 OR ENGL 2013 OR General Education Elective IF Advanced Composition Requirement has already been met ***
<b>15</b>	<b>Semester hours</b>
<b>Fall Semester Year 4</b>	
3	<b>MKTG 3553 Consumer Behavior</b>
3	<b>MKTG 4443 Retail Buying and Merchandise</b>
3	MKTG elective
7	<i>General Education Electives</i>
<b>16</b>	<b>Semester hours</b>
<b>Spring Semester Year 4</b>	
3	<b>MKTG 4533 Marketing Management</b>
3	MKTG elective
3	Junior Senior Business Elective
6	<i>General Education Electives</i>
15	Semester hours
<b>126</b>	<b>Total hours</b>

\* Must be taken prior to fall semester of sophomore year

\*\* Must be taken prior to fall semester of junior year

\*\*\* Must be taken prior to fall semester of senior year

### Marketing Minor for Business Students:

The Department of Marketing and Logistics offers a minor for Walton College students desiring more knowledge of marketing to assist them in their careers. The minor requires the completion of 15 hours of study with all of the courses applied toward the minor taken in residence. The 15 hours include the following courses:

MKTG 3433 Introduction to Marketing Strategy

MKTG 3553 Consumer Behavior

Plus nine hours from the following courses:

MKTG 4233 Integrated Marketing Communications

MKTG 4343 Selling and Sales Management

MKTG 3633 Marketing Research

MKTG 4633 Global Marketing

MKTG 4433 Retail Strategy

MKTG 4443 Retail Buying and Merchandising

Students who desire to earn a Marketing minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course pre-requisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upper level minor requirements must be taken in residence.

SEE PAGE 372 FOR MARKETING (MKTG) COURSES

### Transportation and Logistics Major

The major in transportation and logistics is designed to prepare students for careers in carrier management and logistics management. Carrier management is the management of the domestic and international modes of transportation. Logistic management applies analytical techniques and uses the systems approach in managing the flow of materials into and through the production and manufacturing processes of a firm to its customers.

Basic employment opportunities exist in marketing, sales, and operations positions with carriers in all transportation modes, and in positions with shippers having responsibility in one or more of the areas under logistics management, warehousing, packaging, and materials handling. Opportunities also exist in governmental agencies.

Complete the requirements for a B.S.B.A. degree as listed on page 209. **Hours**

**Total General Education** 60

**Walton College Core Requirements** (See page 209) 33

**Course Requirements in the Major** 24

TLOG 3443 Principles of Transportation 3

TLOG 3613 Business Logistics 3

TLOG 3623 Purchasing and Inventory Systems 3

TLOG 4633 Transportation Carrier Management 3

TLOG 4643 International Transportation and Logistics 3

TLOG 4653 Transportation and Logistics Strategy 3

Plus two classes (six hours) from a single area: 6

#### Information Systems:

ISYS 2263 Intro to Information Systems Dev. 3

#### Marketing:

MKTG 4343 Selling and Sales Management 3

MKTG 3633 Marketing Research 3

MKTG 4633 Global Marketing 3

MKTG 4433 Retail Strategy 3

#### International:

ECON 4633 International Trade Policy 3

ECON 4643 International Macroeconomics and Finance 3

ECON 4653 Global Competition and Strategy 3

FINN 3703 International Finance 3

MGMT 4853 International Management 3

MGMT 4833 International Marketing 3

Junior- senior-level electives within Walton College 15

Maximum of 27 hours of MKTG courses in department (core, major, elective). More than 27 hours allowed if the extra courses are part of interdisciplinary minor or collateral track.

**Total Walton College Requirements** 60  
**Total Degree Requirements** 126

**Transportation and Logistics Eight-Semester Degree Program:**

Students wishing to follow the eight-semester degree plan for Transportation and Logistics should see page 42 in the Academic Regulations chapter for university requirements of the program.

Courses in BOLD must be taken in the designated semester. Courses in ITALIC may be taken in varied sequences as long as other designated requirements for these courses are met. Although other courses listed are not required to be completed in the designated sequence, the recommendations below are preferred.

Fall Semester Year 1	
3	<i>ENGL 1013 Composition I</i> ** - University Core
3	<b>MATH 2053 Finite Math</b> – University Core
3	<b>COMM 1313 Fundamentals of Communication</b>
1	<b>WCOB 1111 Freshman Business Connections</b>
2	WCOB 1012 Legal Environment of Business *
0	<b>WCOB 1120 Computer Competency Requirement</b>
3	<i>U.S. History or Political Science</i> – University Core
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	<i>ENGL 1023 Composition II</i> ** - University Core
3	<b>WCOB 1023 Business Foundations</b>
3	<b>WCOB 1033 Data Analysis and Interpretation</b>
3	<b>ECON 2023 Microeconomics</b> – University Core
4	<i>Natural Science</i> – University Core
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	MATH 2043 Survey of Calculus **
3	<i>ECON 2013 Macroeconomics</i> ** - University Core
6	Select TWO of the following: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
3	<i>Social Science</i> – University Core
3	<i>Fine Art/Humanities</i> – University Core
<b>18</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	<i>Fine Art/Humanities</i> – University Core
4	<i>Natural Science</i> – University Core
3	<i>Business Social Science</i>
6	Select TWO of the following not completed in previous semester: <b>WCOB 2013 Markets and Consumers</b> <b>WCOB 2023 Production and Delivery of Goods and Services</b> <b>WCOB 2033 Acquiring and Managing Human Capital</b> <b>WCOB 2043 Acquiring and Managing Financial Resources</b>
<b>16</b>	<b>Semester Hours</b>
ALL pre-business requirements should be met by end of term	
Fall Semester Year 3	
3	<b>TLOG 3443 Principles of Transportation</b>
3	<b>TLOG 3613 Business Logistics</b>
3	Collateral from a single area
6	WCOB 3016 Business Strategy and Planning
<b>15</b>	<b>Semester hours</b>

Spring Semester Year 3	
3	Collateral from a single area
9	Junior Senior Business Electives
3	<i>ENGL 2003 or ENGL 2013 or General Education Elective</i> IF Advanced Composition Requirement has already been met***
1	<i>General Education Elective</i>
<b>16</b>	<b>Semester hours</b>
Fall Semester Year 4	
3	<b>TLOG 3623 Purchasing and Inventory Systems</b>
3	<b>TLOG 4633 Transportation Carrier Management</b>
6	<i>General Education Electives</i>
3	Junior Senior Business Elective
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 4	
3	<b>TLOG 4643 International Transportation and Logistics</b>
3	<b>TLOG 4653 Transportation and Logistics Strategy</b>
3	Junior Senior Business Elective
6	<i>General Education Electives</i>
<b>15</b>	<b>Semester hours</b>
<b>126</b>	<b>Total hours</b>

- \* Must be taken prior to fall semester of sophomore year
- \*\* Must be taken prior to fall semester of junior year
- \*\*\* Must be taken prior to fall semester of senior year

**Transportation and Logistics Minor for Business Students:**

The Department of Marketing and Logistics offers a minor for Walton College students desiring more knowledge of transportation and logistics to assist them in their careers. The minor requires the completion of 15 hours of study with all of the courses applied toward the minor taken in residence. The 15 hours include the following courses:

- TLOG 3443 Principles of Transportation
- TLOG 3613 Business Logistics
- TLOG 3623 Purchasing and Inventory Systems
- TLOG 4633 Transportation Carrier Management
- TLOG 4643 International Transportation Logistics

Students who desire to earn a Transportation and Logistics minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upper level minor requirements must be taken in residence.

SEE PAGE 389 FOR TRANSPORTATION AND LOGISTICS (TLOG) COURSES

**WALTON COLLEGE OF BUSINESS (WCOB)**

William P. Curington  
 Associate Dean for Academic Affairs, 328 WCOB, 479-575-7105

These courses are interdisciplinary courses that are not attached to a specific department in Walton College.

**Enterprise Resource Planning Minor**

The Walton College offers an interdisciplinary minor in Enterprise Resource Planning (ERP). ERP systems are large-scale programs, which are used by many large companies to integrate their business processes and run the organization using primarily one software system. The minor requires completion of 15 hours of study with all of the courses applied toward the minor taken in residence. The 15 hours include:

- WCOB 4213 ERP Fundamentals

WCOB 4223 ERP Configuration and Implementation

Plus nine hours from the following courses:

ACCT 3533 Accounting Technology

ACCT 3723 Intermediate Accounting I

ISYS 4233 ERP Development

TLOG 3443 Principles of Transportation

TLOG 3613 Business Logistics

TLOG 3623 Purchasing and Inventory Systems

Students who desire to earn an Enterprise Resource Planning minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered for the minor. All upper level minor requirements must be taken in residence.

### **Financial Economics Minor**

The Walton College offers an interdisciplinary minor in Financial Economics. The minor will provide students with the background needed for research in finance and industry. The minor requires completion of 15 hours of study with all

of the courses applied toward the minor taken in residence. The 15 hours include:

FINN 3013 Financial Analysis

ECON 4753 Forecasting (Applied Time Series)

Plus nine hours from the following courses:

FINN 3063 Investments

FINN 3603 Corporate Finance

ECON 3433 Money and Banking

ECON 4743 Intro. to Econometrics

Students who desire to earn a Financial Economics minor must notify the Walton College Undergraduate Programs Office of intent to pursue a minor. All requirements for the minor must be completed prior to the awarding of the student's undergraduate degree. All specific course prerequisites must be met. Each student must have a 2.00 cumulative grade-point average in the courses offered in the minor. All upper level minor requirements must be taken in residence.

SEE PAGE 390 FOR WALTON COLLEGE OF BUSINESS (WCOB) COURSES

# College of Education and Health Professions

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## Office of the Dean of the College

324 Graduate Education Building, 479-575-3208

### Dean of the College

M. Reed Greenwood

### Associate Dean for Administration

John W. Murry Jr.

### Associate Dean for Academic Affairs

Barbara E. Hinton

### Assistant Dean for Academic Affairs

Stephen J. Langsner

### Director of Advising

Barbara Goodman

## Sylvia Hack Boyer Center for Student Services

336 Graduate Education Building, 479-575-4203

### Teacher Education/Licensure

117 Peabody Hall, 479-575-6740

### Honors Program

316 Graduate Education Building, 479-575-4280

### Speech and Hearing Clinic

410 Arkansas Avenue, 479-575-4509

### World Wide Web:

<http://coehp.uark.edu/>, E-mail: [bcss@uark.edu](mailto:bcss@uark.edu)

## MISSION AND OBJECTIVES

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The mission of the College of Education and Health Professions is to enhance the quality of life of the citizens of Arkansas, the nation, and the world through the development of scholar-practitioners in education, health, and human services. The vision of the college is to become a nationally competitive, student-centered research college serving Arkansas and the world.

The goals of the College of Education and Health Professions are as follows:

- Strengthen the academic quality and reputation of the college by developing and enhancing programs of excellence in teaching, research, and service.
- Improve the quality and diversity of our students, faculty, and staff, and increase the size of our student enrollment.
- Generate increased private and public support for the college's research, academic, and service initiatives.

## FACILITIES AND RESOURCES

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### The Sylvia Hack Boyer Center for Student Services

To ensure that students receive the personal attention they need and deserve throughout their enrollment, the college established the Sylvia Hack Boyer Center for Student Services. Students who have completed 44 hours or less are assigned a professional academic adviser in the Center who will assist them by providing accurate and personalized academic information, educating them about their academic responsibilities, and referring them to the internal and external resources and services of the University.

Questions pertaining to undergraduate programs, transfer of credit, student services, graduation requirements, and university administrative policies and procedures can be directed to the Sylvia Hack Boyer Center for Student Services, 479-575-4203, 336 Graduate Education Building. The Center is part of the Office of the Associate Dean for Academic Affairs and can be reached via e-mail at [bcss@uark.edu](mailto:bcss@uark.edu).

### Organization

For administrative purposes, the undergraduate programs of the college are organized under four academic units, with majors shown after each unit:

1. Curriculum and Instruction
  - Career and Technical Education
  - Childhood Education
  - Elementary Education
2. Eleanor Mann School of Nursing
  - Nursing
3. Health Science, Kinesiology, Recreation, and Dance
  - Health Science
  - Kinesiology
  - Recreation
4. Rehabilitation, Human Resources, and Communication Disorders
  - Communication Disorders
  - Human Resource Development

### Facilities

The Graduate Education Building, Peabody Hall and the Health, Physical Education and Recreation Building serve as the nucleus of the College of Education and Health Professions' activities. An auditorium, several conference and seminar rooms, classrooms, and offices for individual professors, along with administrative and service units such as dean, associate dean for administration, associate and assistant deans for academic affairs, the Sylvia Hack Boyer Center for Student Services, and computer laboratories are housed in the Graduate Education Building.

Peabody Hall houses the Department of Curriculum and Instruction, Teacher Licensure, classrooms, offices for individual professors and Peabody Perks coffee shop. The Health, Physical Education and Recreation (HPER) Building houses the majority of faculty offices and classrooms for athletic training, health science, kinesiology, recreation, the Office for Studies on Aging and the Human Performance Laboratory. Specialized indoor space for instruction and recreation includes two dance studios, the Donna Axum Fitness Center, four gymnasiums, an Olympic-size swimming pool, a jogging track, a climbing wall, and a combative room. The Department of Health Science, Kinesiology, Recreation, and Dance uses the Donna Axum Fitness Center, HPER Building Natatorium, UA tennis courts, and Barnhill Arena for instructional purposes. Intramural/Recreational Sports offices are located on the second level of the HPER Building. The intramural/recreational sports program is a University-wide service program housed in the college. Intramural/Recreational Sports provides recreational activities to the entire University community. The program is organized into seven program areas: intramural sports, fitness/wellness, facility management, special events, sport clubs, accessible recreation, and the Outdoor Connections Center.

The Communication Disorders program is housed in the Speech and Hearing Clinic. The clinic contains faculty offices, a classroom, a graduate seminar room, teaching and research laboratories, and space and facilities for the provision of services to the speech, language, and hearing impaired. University services are provided through the clinic to University students and the community.

The Eleanor Mann School of Nursing is housed in Ozark Hall. The nursing program facilities include administrative offices, faculty offices, two classrooms, two laboratories, a conference room, and a computer lab. The school has affiliation agreements for clinical practice with area health care agencies.

West Avenue Annex houses the following education research and service units: the National Office for Research, Measurement and Evaluation Systems (NORMES), the Center for Mathematics and Science Education (CMASE), the Center for Children and Youth, and the Arkansas Leadership Academy (ALA). Established in 1991, the Arkansas Leadership Academy is a nationally recognized statewide partnership of 13 universities, 9 professional associations, 15 educational cooperatives, the Arkansas Departments of Education, Higher Education, and Workforce Education, the Arkansas Educational Television Network, Tyson Foods Inc., Wal-Mart Stores Inc., and the Walton Family Foundation. The National Office for Research, Measurement, and Evaluation Systems conducts targeted educational research focusing on issues affecting students in Arkansas and general theoretical work in statistics, testing, and educational measurement. The Center for Mathematics and Science Education provides quality resources to private and public educators. The center also serves as the Arkansas NASA Educator Resource Center, disseminating educational materials provided by NASA.

Established in 1974, the Center for the Utilization of Rehabilitation Resources for Education, Networking, Training and Service (CURRENTS) provides customized training and consulting for organizations ranging from large state agencies to small not-for-profits and is nationally recongized for the high level of commitment and responsiveness to their customers and their efforts to expand, improve, and strengthen services to people with disabilities. The center is located at the Arkansas School for Mathematics, Sciences and the Arts, Hot Springs, Arkansas.

Established in 1981, the Research and Training Center for People who are Deaf or Hard of Hearing conducts research and training programs to enhance rehabilitation efforts on behalf of the 24 million U.S. citizens who are deaf or hard of hearing. These programmatic efforts are directed toward enhancing the career preparation, job entry and placement, career advancement, and workplace communication accommodations consistent with the Americans with Disabilities Act. The center is located in Little Rock.

## Academic Journals

The *Journal of Interpretation* is edited by Douglas Watson, a professor of rehabilitation counseling. Published by the Registry of Interpreters for the Deaf, this journal is considered the most widely read sign-language interpreting journal in the world.

In addition, the college is host to the *Journal of Research & Policy Studies*, edited by Christopher J. Lucas, a professor of educational foundations, and the *Journal of Research in Education*, edited by Michael Miller, a professor higher education.

## DEGREES OFFERED

The college offers curricula leading to the Bachelor of Science in Education degree (B.S.E.) with several programs listed below. Several of these degree programs have concentrations and specialties that are described in the section titled "Departments and Majors."

The college also offers the curriculum leading to the Bachelor of Science in Nursing (B.S.N.). The degree programs are described in this college section under the area of "Departments and Majors."

## MAJORS, CONCENTRATIONS, AND MINORS

### Majors and Concentrations

- Career and Technical Education
- Business Education
- Competency-Based Teacher Development
- Family and Consumer Sciences Education
- Technology Education
- Childhood Education
- Communication Disorders
- Elementary Education
- Health Science
- Human Resource Development
- Kinesiology
  - P-12 Teaching Physical Education/Wellness & Leisure
  - Exercise Science – Pre-Professional
  - Applied Exercise Science
- Nursing
- Recreation

### Minors

Undergraduate students in the college may declare any official academic minor available at the University of Arkansas. Students must notify the Sylvia Hack Boyer Center for Student Services of their intent to pursue a minor. The college, with the assistance of the college offering the minor, will certify that the requirements of the minor have been satisfied. The academic minor will be designated on the student's official transcript. Requirements for the minor are listed in the catalog under the department offering the minor. The College of Education and Health Professions only offers one minor in Recreation (Department of Health Sciences, Kinesiology, Recreation and Dance). See page 258 for course requirements.



## OTHER PROGRAMS

### Curricula Offered For Initial Licensure

**Nursing Licensure:** Completing the minimum requirements for the degree of Bachelor of Science in Nursing will satisfy the academic requirements for licensure as a Registered Professional Nurse. Students must complete all of the requirements set forth by the Arkansas State Board of Nursing to be licensed as a registered nurse. See adviser for details.

#### Teacher Licensure and Licensure of other School Personnel:

The approved program of study for initial licensure at the University of Arkansas, except for some programs in childhood education, career and technical education (business education, family and consumer science, technology education), kinesiology (P-12 physical education), speech-language pathology, music and art education, and agriculture education, is the Masters of Arts In Teaching (M.A.T.) degree program. The M.A.T. degree program is offered in consecutive summer, fall, and spring semesters with initial enrollment in the summer semester. The M.A.T. is a graduate degree program and requires a minimum of 33 semester hours. The M.A.T. degree program has two areas of emphasis: childhood education, middle level education and secondary education in drama/speech, English, foreign language, mathematics, science and social studies. Consult the Admissions Process for Initial Teacher Licensure Stages I-IV on page 238 and the *Graduate School Catalog* for admission and graduation requirements for the M.A.T. degree program. The approved program of study for initial licensure in speech-language pathology is the Master of Science degree in Communication Disorders. Procedures for obtaining licensure parallel those used with M.A.T. graduates. There are some non-M.A.T. licensure programs. See the appropriate sections of this catalog for that information. For bachelor's degree licensure requirements in career and technical education, music and art education, and some areas of agriculture education, see appropriate sections of this catalog.

The State Board of Education issues the regulations governing the licensure of teachers in Arkansas. The Board specifies minimum cut-off scores for all Praxis exams. The University of Arkansas pass rate for 2007-2008 was 100 percent, and 186 students completed the program. Each application for a teacher's license requires completion of an approved program of study, completion of a state and national background check, and documentation of passing the Praxis exams. Those wishing to add an additional license or endorsement, should contact the Coordinator of Teacher Education in 117 Peabody Hall for the approved programs of study or go to <http://coehp.uark.edu/licensure.html>. Look for the menu "Additional Licensure Plan."

The Bumpers College of Agricultural, Food and Life Sciences, College of Education and Health Professions, Fulbright College of Arts and Sciences, and the University Teacher Education Board for Initial Certification have developed the preparation programs leading to initial teacher licensure. The Coordinator of Teacher Education will recommend students for initial teacher license who have submitted the licensing packet and successfully completed the appropriate approved program and all state licensure requirements. Licensure packets may be obtained from the Coordinator of Teacher Education, 117 Peabody Hall, 479-575-6740, or from the Arkansas Department of Education 501-682-4342. Students must follow the licensure guidelines as set forth by the Arkansas Department of Education in consultation with the Coordinator of Teacher Education. Adding an additional licensing area or endorsement may also require passing the Praxis II test and an approved program of study. See College Academic Regulations for the admission process for initial teacher licensure.

### University Teacher Education Board for Initial Certification

The University Teacher Education Board for Initial Certification is composed of the associate deans; faculty representatives from the College of Education and Health Professions; the J. William Fulbright College of Arts and

Sciences; the Dale Bumpers College of Agricultural, Food and Life Sciences; public school teachers and/or administrators, and students. The functions are to (1) govern the teacher education and licensure program; (2) establish general policies and procedures necessary to maintain quality in degree programs; (3) oversee the general coordination of the initial licensure process; and (4) approve new courses and course changes in individual licensure program. The Board serves as a liaison group for the faculties involved and emphasizes the importance of teacher education as one of the primary responsibilities of the University.

## COLLEGE ADMISSION REQUIREMENTS

All entering students (including freshmen, international, and transfer) admitted to the University of Arkansas, Fayetteville, are eligible for admission to the college.

### Transfer of Credit

The policies controlling the granting of credit for course work taken at other institutions apply as follows:

1. Neither hours nor grades earned in transfer work are used in the determination of the student's grade-point average.
2. General transfer credit is awarded for courses in which a grade of "C" or higher has been earned. Course work must be applicable to a baccalaureate degree; credit is not granted for course work that is remedial or technical in nature. Students can petition to have up to six hours of "D" grades transfer for degree credit to the University of Arkansas. Students must have a 2.00 GPA on a 4.00 scale to be considered, and courses must meet core or elective requirements in the student's degree program. Courses outside the degree program and courses in the major cannot be considered for transfer. The Third Level Administrative Review Committee makes all decisions regarding "D" transfers. Petitions can be obtained from the Office of Admissions, or you can print and mail a "D" Petition Form. The form is available online at <http://www.uark.edu/registrar/TransferCredit/>.
3. If a course with a grade of "D" is successfully petitioned through the Office of Admissions for "General Credit," the College of Education and Health Professions requires a second petition called "A Petition to Accept 'D' Grades for Transfer Credit" to be successfully navigated. The petition can be obtained from the Sylvia Hack Boyer Center for Student Services, 336 Graduate Education Building. Each course will be reviewed by the COEHP Undergraduate Curriculum Committee. Students are encouraged to make an appointment with an academic adviser in the Sylvia Hack Boyer Center for Student Services to discuss options and to clarify this procedure.
4. Education courses completed at the lower-division (freshman or sophomore) level at another institution will not count as equivalents of upper-division (junior or senior) level courses offered in the college.
5. Courses taken at other institutions of higher education where the course content is designed to be remedial are not accepted.
6. The student should be prepared to submit official course descriptions of transfer course work if there is any question as to whether the college will grant degree credit for such work.

### Undeclared Majors

Students enrolled in the College of Education and Health Professions are encouraged to declare a major as soon as possible. For assistance contact the Sylvia Hack Boyer Center for Student Services, 336 Graduate Education Building, 479-575-4203.

## COLLEGE SCHOLARSHIPS

The College of Education and Health Professions offers limited numbers of scholarships in varying amounts. Recipient selection is based on a variety of attributes that are specific to each award. Attributes may include but are not limited to; the basis of promise, character, leadership skills, scholarship, or financial need.

Scholarship applications are available in December of each year via the College Web site at <http://coehp.uark.edu/#>. All current and future students of the college are strongly encouraged to take advantage of these scholarship opportunities. For further information regarding scholarships and the application process, visit the Scholarships link on the College of Education and Health Professions' Web site or contact the Office of the Associate Dean for Administration, 301 Graduate Education Building, 479-575-5116.

## STUDENT ORGANIZATIONS

There are many general-interest societies and organizations on the campus, and nearly every department of the University maintains an honor society through which high scholarship is rewarded. Of special interest to students in the college are the following:

- Kappa Delta Pi – honor society for education
- Phi Delta Kappa – honor fraternity for graduate students
- Kinesiology Club – for kinesiology majors
- Recreation Majors Club – for recreation students
- Razorback Athletic Training Association (RATA) – for undergraduate kinesiology majors with a concentration in exercise science – pre-athletic training, entry level graduate athletic training students and graduate assistant athletic trainers in women's and men's athletics
- National Student Speech-Language-Hearing Association – for communication disorders majors
- Arkansas Nursing Students Association, National Student Nurse Association, and the Pi Theta chapter of Sigma Theta Tau International Honor Society of Nursing – for nursing majors
- Rehabilitation Counseling Association for Students – rehabilitation counseling program majors.
- Technology Education Collegiate Association -- Technology education program majors.

## COLLEGE ACADEMIC REGULATIONS

### Admission Process for Initial Teacher Licensure

#### Stage I: Enrollment

Enroll in an undergraduate degree program leading to a potential teacher licensure field. Potential fields include the following:

- Agricultural Education – B.S.A.
- Art Education – B.F.A.
- Career & Technical Education (Business Education) – B.S. E. (initial licensure program, see page 15 for admissions requirements)
- Career & Technical Education (Family & Consumer Science) – B.S. E. (initial licensure program, see page 15 for admissions requirements)
- Career & Technical Education(Technology Education) – B.S. E. (initial licensure program, see page 15 for admissions requirements)
- Childhood Education – B.S.E.
- Elementary Education – B.S.E. Licensure Program
- Human Environmental Sciences Education – B.S.H.E.S.

- Kinesiology P-12 – B.S.E.
- Music Education – B.M.
- Secondary Education – B.A., B.S.
- Speech-Language Pathology – B.S.

#### Stage II: Evaluation

Complete an Evaluation for Internship by October 1 prior to entering the undergraduate student teaching semester or the Masters of Arts in Teaching (M.A.T.). All non-M.A.T. licensure programs should complete the evaluation by October 1 prior to a fall student teaching and by March 1 prior to a spring student teaching experience. Satisfactory completion of this form does not guarantee admission to the student teaching semester or the Masters of Arts in Teaching (M.A.T.) degree program or other teacher education programs. All requirements must be cleared for the internship. This form is available from the college Web site at <http://coehp.uark.edu/4880.htm>. The form must be completed and returned to the Coordinator of Teacher Education, 117 Peabody Hall.

Students must meet the following criteria to be cleared for internship:

1. Pass Praxis I test by meeting or exceeding the Arkansas Department of Education cut-off scores. This test should be taken after the student has completed 30 credit hours and upon completion of ENGL 1013, ENGL 1023, and MATH 1203. Please note that several departments have additional program requirements regarding the Praxis I and II. Please consult with adviser for additional requirements.
2. Obtain a "C" or better in the following pre-education core if these courses are required for the chosen program:
  - CIED 1002, CIED 1011, CIED 3023 (PHED 3903 for KINS p-12 majors), and CIED 3033.
  - In Addition, For Middle-Level Education and Childhood Education a minimum of "C" or higher must be earned in ENGL 1013, ENGL 1023, ENGL 2003, COMM 1313, and MATH 1203 unless UA exemption is earned in one or more of the courses. This does not apply to career and technical education students.
3. Career and technical students may take CATE 1001 Practicum in Career & Technical Education in lieu of CIED 1002 and CIED 1011.
4. Complete additional licensure requirements: COEHP majors take either HLSC 1002 or 1103, and PEAC 1621. Kinesiology majors take HLSC 1103, and PHED 3043. CHED and MLED majors take HIST 3383. SEED Social Studies students take either HIST 4583 or HIST 3383 and any ECON course. BUED students may take HLSC 1103 or HLSC 1002 and PEAC 1621.
5. Secondary Education majors except for art and music majors, must complete the following courses with a grade of "C" or higher: CIED 4023, CIED 4131, ETEC 2001/2002L or demonstration of computer competencies in a portfolio.
6. Obtain a "C" or better in the six hours of program-specific courses (see adviser for information), except for Kinesiology P-12.
7. Schedule a visit with adviser for additional requirements including admission to upper-division courses.
8. Consult with adviser regarding Praxis II requirements.
9. Consult adviser for the GPA requirements for the chosen program.

#### Stage III: Admission

##### A. Admission to M.A.T.

The following minimum criteria are necessary to be eligible for consideration for admission to the M.A.T. Degree Program: (Consult with faculty adviser for additional requirements set by the chosen program.)

1. Meet all requirements in stages I and II.
2. Complete an appropriate undergraduate degree program.
3. Earn a cumulative GPA of 3.0 on the last 60 hours of Bachelor's degree for automatic admission to the Graduate School. Consult adviser for the GPA requirements for the chosen program.

4. Obtain recommendation for admission from M.A.T. program area based on successful completion of portfolios, evaluation for internship, GPA requirements, course work requirements, selected written recommendations, an interview, and other requirements specified by the chosen program.
5. Obtain admission to Graduate School. (See *UA Graduate School Catalog* for details.)  
Enrollment in each cohort will be limited. Transfer students will be allowed to enter the program on a space-available basis and must progress through all three admission stages.

#### **B. Admission to Career and Technical Education B.S.E.**

The following minimum criteria are necessary to be eligible for consideration for admission to the career and technical education B.S.E. teacher licensure program. (Consult with faculty adviser for additional requirements set by the chosen program).

1. Meet all applicable requirements in Stages I and II.
2. Earn a cumulative GPA of 2.50 or higher in the undergraduate program. Several courses have minimum grade requirements of “C” or better.
3. Obtain recommendation for admission to the student teaching program area based on passing scores of Praxis I and a successful interview with the teacher education faculty in career and technical education.

#### **Stage IV: Graduation**

##### **A. Requirements for M.A.T.**

1. Meet all requirements in stages I – III.
2. Obtain a minimum cumulative GPA of 3.00.
3. Complete a minimum of 33 graduate semester hours as specified by program area.
4. Satisfactorily complete an internship. The internship or student teaching experience will be completed at a school/district in Benton or Washington County that has been approved by the Northwest Arkansas Partnership Steering Committee.
5. Pass the appropriate Praxis tests (see adviser for the appropriate test) by meeting or exceeding the Arkansas Department of Education cut-off scores. This test is required for most programs. Please consult with adviser.
6. Successfully complete Comprehensive Examination.
7. Consult with adviser for other requirements.
8. Apply for degree at the Graduate School, 119 Ozark Hall.

##### **B. Requirements for Career and Technical Education and Kinesiology P-12**

1. Meet all requirements in Stages I - III.
2. Obtain a minimum cumulative GPA of 2.50.
3. Complete all coursework in the Program of Study.
4. Satisfactorily complete a student teaching experience for one semester. The student teaching experience will be completed at a school/district in Benton or Washington County.
5. Pass the appropriate Praxis tests (see adviser for the appropriate test) by meeting or exceeding the Arkansas Department of Education cut-off scores.
6. Successfully complete a teaching portfolio, except for Kinesiology P-12.
7. Consult with adviser for other requirements.
8. Apply for degree.

#### **Initial Licensure**

Students who have completed the stages listed above must obtain a licensure packet from the Coordinator of Teacher Education, 117 Peabody Hall, prior to entering internship. A mandatory meeting is held each April before starting either an internship or a student teaching experience.

Students should always consult the Coordinator of Teacher Education or adviser regarding licensure requirement changes. Students will not be licensed to teach in Arkansas until they have met all requirements for licensure as set forth by the Arkansas Department of Education.

Students who have completed the B.M. or B.F.A. in music or art education and the B.S.A. in agriculture education and have completed the internship may obtain the licensure packet from the Coordinator of Teacher Education, 117 Peabody Hall, at the mandatory meeting held each April before starting either an internship or a student teaching experience.

Usually licensure in another state is facilitated by qualifying for a license in Arkansas. Application in another state must be made on the application form of that state, which can be obtained by request from the State Teacher Licensure office in the capital city. An official transcript should accompany the application. In many instances the applications are referred to the Coordinator of Teacher Education to verify program completion in teacher education.

#### **College Honor Roll**

At the close of each semester, the college recognizes students who qualify for the honor roll. They are the 10 percent of the highest-ranking students in each class. Students must carry a minimum of 12 semester hours to be eligible for the Honor Roll and obtain a minimum term GPA of 3.5.

#### **Graduation with Honors**

Graduation with Honors will be conferred to College of Education and Health Professions students (who are not participating in the college “Honors Program”) based upon their University of Arkansas cumulative grade-point average at the time of graduation. To earn this distinction, a student must have completed at least one-half of the course work required for his or her degree at the University of Arkansas, Fayetteville. The graduation with honors designation will be assigned as follows:

1. For *highest distinction*, the student must have a minimum cumulative grade point average of 3.95 and rank in the top 10 percent of the graduating class.
2. For *high distinction*, the student must have a minimum cumulative grade point average of 3.75 and rank in the top 10 percent of the graduating class.

#### **HONORS PROGRAM**

The College of Education and Health Professions Honors Program is designed for students who value and want to be challenged by an exceptional educational experience and want to focus their studies intensively. The program creates and supports an academic environment of intellectual adventure and provides a carefully integrated and demanding curriculum. The rewards are immense: high academic achievement; involvement in undergraduate research; academic distinction of *Summa Cum Laude*, *Magna Cum Laude*, or *Cum Laude* and confirmation of an honors degree on the student’s transcript; and recognition at commencement.

The mission of the Honors Program is to: Establish and maintain an Honors community of learning that is intellectually rigorous, personally and culturally enriching, and fosters learning and discovery through independent and collaborative inquiry; Allow students to be creative, inquisitive and think outside the box; Support student research and analysis of ideas; Support student academic ventures through mentoring, travel, and supplies when presenting work at undergraduate research symposia; Challenge students to connect the classroom with the larger world by expanding social and cultural experiences and promoting leadership, and Prepare students for admission to and success

within graduate and professional schools in the United States and abroad.

Benefits of participating in the Honors Program include: Small class sizes, close contact with talented faculty, opportunity for independent study that counts toward the requirements of the Honors Program, special academic counseling and priority registration, increased confidence and skill in writing, Honors housing, recognition on transcript as "Graduate of the University Honors Program," enhanced career opportunities, and increased advantages for graduate or professional school applicants.

Admission to the COEHP Honors Program assures automatic admission to the University of Arkansas Honors College. The following are admission criteria for students seeking admission to the COEHP Honors Program:

#### Entering Freshmen

- 28 ACT or equivalent SAT score (not super scored)
- 3.5 or greater high school GPA

#### Students Applying Following Their First Academic Year

- Successful completion of one academic year at the University with a cumulative 3.5 or greater GPA
- Departmental recommendation regarding the student's academic abilities

#### Inter-College Transfer of Honors Students

Students at the University who were honors students in other college honors programs on campus may transfer into the COEHP under the following criteria:

- 0-29 hours- 3.25 cumulative GPA
- 30-59 hours- 3.37 cumulative GPA
- 60-89 hours- 3.50 cumulative GPA

#### Transfer Students

- 3.5 Cumulative GPA in ALL transfer work
- Letter of recommendation from a previous professor regarding the student's academic abilities

#### Application:

1. Complete the Honors Program Application and return to: COEHP Honors Program, Attention Assistant Dean for Academic Affairs, Graduate Education Building, Room 317 Fayetteville, AR 72701
2. The COEHP Honors Council will review and approve all applications. A letter of acceptance will be sent to the student within 10 working days of receipt of the application.
3. Following admission to the COEHP Honors Program, a faculty mentor adviser will be assigned from the student's academic department in addition to an academic adviser in the Sylvia Hack Boyer Center for Student Services.

Eligibility for continued enrollment in the COEHP Honors Program will be based on the following cumulative minimum grade-point averages:

- 3.25 GPA - At the end of the freshman year (0-29 hours)
- 3.37 GPA - At the end of the sophomore year (30-59 hours)
- 3.5 GPA - At the end of the junior year (60-89 hours)
- 3.5 GPA - At graduation

At the end of each semester, the director of the COEHP honors program will review the academic records of all enrolled honors students to determine whether each one has the cumulative grade-point average to continue in the program. Students with less than a 3.5 GPA will be placed on probation. The student will be reinstated to the honors program when they have achieved the minimum grade point average.

#### Honors Degrees

The College of Education and Health Professions is dedicated to providing programs designed to meet the honors student's needs. To achieve this aim, the college faculty has developed two honors tracts for students, which includes the COEHP Scholars program and the COEHP Honors Program. Students successfully completing the COEHP Honors Program and Scholars Program

will receive the following academic accolades: (1) GPA > 3.9 - *Summa Cum Laude*, (2) GPA > 3.7 - *Magna Cum Laude*, (3) GPA  $\geq$  3.5 *Cum Laude*.

**Requirements for the COEHP Scholars Program:** The Scholars program provides an honors program for students of superior academic talent. Requirements for the scholars program include meeting all University and department degree requirements; completion of a minimum of 18 honors credit hours taken from the University program of study; completion of a minimum of 6 honors credit hours within the student's program of study including HNED 3001H Honors Education Thesis Tutorial, HNED 4003H Honors Education Thesis/Project; a minimum of 2 hours of honors courses from the student's academic department; completion of honors requirements including preparation and oral defense of an honors thesis; and a minimum cumulative grade-point average of 3.5.

#### Requirements for the COEHP Honors Program:

Requirements for the COEHP Honors Program include meeting all University, COEHP, and department degree requirements; completion of a minimum of 12 honors credit hours taken from the university program of study; completion of a minimum of 6 honors credit hours within the student's program of study including HNED 3001H Honors Education Thesis Tutorial, HNED 4003H Honors Education Thesis/Project; a minimum of 2 hours of honors courses from the student's academic department; completion of honors requirements including preparation and oral defense of an honors thesis; and a minimum cumulative grade-point average of 3.5.

For more information about the honors program or to complete an application form, please refer to the college's honors Web page at <http://honors.uark.edu/>.

SEE PAGE 357 FOR COLLEGE OF EDUCATION AND HEALTH PROFESSIONS HONORS PROGRAM (HNED) COURSES

## DEGREE REQUIREMENTS

### Minimum Requirements for the B.S.E. or B.S.N. Degree

The candidates for a baccalaureate degree from the college must meet University requirements, which specify at least 124 semester hours of work with a grade-point average of at least 2.00 on all work attempted in the University. Students exempting any course must still meet the 124-hour graduation requirement and should consult their adviser for specific program requirements. Exemption of courses does not result in credit earned. The students must comply with the prescriptions and restrictions listed below and under General Studies and must complete the requirements in one or more of the approved degree programs.

Students must also meet all other University Requirements for Graduation, including the University Core requirements (page 40). Students are required to have a pre-graduation check at least one semester prior to the graduation term. Students who complete the pre-graduation check and meet all University and College of Education and Health Professions requirements may apply for graduation under the guidelines detailed on page 41. All course work, University requirements, and college requirements must be completed by the deadline for the term in which applied. Students not graduating in spring, but wishing to participate in the spring commencement ceremony, must apply for graduation by the established priority deadline for the spring term. For clarification, please contact the Sylvia Hack Boyer Center for Student Services, 336 Graduate Education Building, at 479-575-4203.

## GRADUATE STUDIES

The Graduate School, in cooperation with the college offers advanced

work in education and health professions leading to the degrees of Master of Arts in Teaching, Master of Science, Master of Education, Educational Specialist, Doctor of Education, and Doctor of Philosophy.

The graduate programs include:

- Childhood Education
- Communication Disorders
- Counselor Education
- Curriculum and Instruction
- Educational Leadership
- Educational Statistics and Research Methods
- Educational Technology
- Education Reform
- Elementary Education
- Health Science
- Higher Education
- Kinesiology
- Middle-Level Education
- Physical Education
- Recreation
- Rehabilitation
- Secondary Education
- Special Education
- Workforce Development

The Graduate School awards the graduate degrees. Students who are interested in registering for graduate courses or in becoming candidates for these degrees should consult the dean of the Graduate School and the *Graduate School Catalog*.

Students who plan to study for an advanced degree in the subject-matter field should consult with the head of the department concerning course requirements to be eligible to begin graduate study. Specialization requirements for a B.S.E. degree in the College of Education and Health Professions may not be sufficient in every field to gain admission for graduate study without deficiencies.

## ACCREDITATIONS

Students who complete the approved program of study leading to initial licensure are eligible to receive licenses to teach at the grade level or in the fields for which they have made preparation upon application and presentation of acceptable scores on the appropriate Praxis exams. However, students must follow licensure guidelines set forth by the Arkansas Department of Education to be licensed to teach.

The teacher education program of the College of Education and Health Professions is accredited by the National Council for Accreditation of Teacher Education (NCATE), 2010 Massachusetts Ave., NW, Suite 500, Washington, D.C. 20036; phone 202-466-7496; Web: www.ncate.org. This accreditation covers the initial teacher preparation programs and/or advanced educator preparation programs. Because of the accreditation by the National Council for Accreditation of Teacher Education, students who complete the curricula as outlined in this catalog are eligible to be recommended for licensure in states that agree to certify graduates who are recommended by the College of Education and Health Professions as having fulfilled its requirements.

The teacher education program submits data to Educational Testing Service for its Title II Report. According to data from this report, there were 116 individuals who completed the teacher education program at the University of Arkansas in 2003-2004. Of these, 100 percent passed the Praxis I and II tests by the cut-off date.

The University of Arkansas holds membership in and is accredited

by the North Central Association of Colleges and Secondary Schools. The college is also a member of the American Association of Colleges for Teacher Education. The graduate program in communication disorders is accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association. The counselor education graduate program is nationally accredited through the Council for the Accreditation of Counseling and Related Educational Programs (CACREP). The Bachelor of Science in Nursing (B.S.N.) degree program is accredited by the Commission on Collegiate Nursing Education and by the National League for Nursing Accrediting Commission. It is also approved by the Arkansas State Board of Nursing. The M.S. degree program in Rehabilitation Counseling is accredited by the Council on Rehabilitation Education (CORE). Graduates of the accredited program are eligible to sit for the Certified Rehabilitation Counselor (CRC) examination.

## DEPARTMENTS AND MAJORS

### CURRICULUM AND INSTRUCTION (CIED)

Michael K. Daugherty  
 Department Head  
 214 Peabody Hall  
 479-575-4209  
 mkd03@uark.edu

The Department of Curriculum and Instruction sponsors initial teacher licensure programs in the areas of career and technical education, elementary education, childhood education and secondary education. The department also offers additional licensure plans in ESL, gifted and talented, special education and selected other areas (please see College Web Site licensure link). The Special Education Program also offers a Graduate Certificate in Autism Spectrum Disorders (ASD). Additional secondary school licensure programs are made available with the cooperation of the Department of Health Science, Kinesiology, Recreation, and Dance; the Department of Rehabilitation, Human Resources and Communication Disorders; the J. William Fulbright College of Arts and Sciences; and the Dale Bumpers College of Agricultural, Food and Life Sciences,

SEE PAGE 327 FOR CURRICULUM AND INSTRUCTION (CIED) COURSES

### CAREER AND TECHNICAL EDUCATION (CATE)

- Professors Daugherty, Thompson (C.)
- Associate Professor Orr
- Clinical Instructor Carter

The University of Arkansas has been approved by the State Board for Workforce Education for the preparation of teachers, supervisors, and administrators in career and technical education. Three of the four concentration areas lead to teacher licensure. These three concentration areas include: business education (BUED), family and consumer sciences (FCSE) and technology education (TEED). One other concentration in career and technical education: competency-based teacher development (CBTD) does not lead to teacher licensure.

SEE PAGE 323 FOR CAREER & TECHNICAL EDUCATION (CATE) COURSES.

**Business Education (BUED)**

Betsy Orr  
 Adviser  
 112 Peabody Hall  
 479-575-6430  
 borrr@uark.edu

Completion of the Bachelor of Science in Education degree with a Business Education concentration has one goal: licensure. This concentration is designed for students who wish to teach in a public school at the junior high or secondary level. Requirements for initial licensure may be met by completion of the B.S.E. degree. Students should meet with their adviser for information regarding additional licensure plans (ALP) and endorsements. Refer to the college academic regulations, admission process for initial licensure for other requirements.

**Hours**

- I. University Core Requirements (See page 40)** 35
  - Every undergraduate student must meet the advanced composition requirement (See page 41)
  - Required University Core for Business Education
    - PSYC 2003 General Psychology
    - ECON 2013 Principles of Macroeconomics
    - ECON 2023 Principles of Microeconomics
    - MATH 2053 Finite Math
- II. BUED General Education Requirements** 3
  - HLSC 1002 Wellness Concepts and PEAC 1621 Fitness Concepts or HLSC 1103 Personal Health and Safety
- III. Professional Education** 33
  - CIED 3023 Survey of Exceptionalities
  - CIED 3033 Classroom Learning Theory
  - CATE 1001 Practicum in Career & Technical Education
  - CATE 4003 Professionalism
  - CATE 4013 Teaching Strategies
  - CATE 4023 Classroom Management
  - CATE 4033 Assessment/Program Evaluation
  - CATE 4041 Lab Management
  - CATE 4051 Seminar
  - CATE 406V Teaching Internship
- IV. Technical Requirements** 53
  - WCOB 1012 Legal Environment of Business
  - WCOB 1023 Business Foundations
  - WCOB 1033 Data Analysis and Interpretation
  - WCOB 1120 Computer Competency Requirement
  - WCOB 2013 Markets and Consumers
  - WCOB 2023 Production and Delivery of Goods and Services
  - WCOB 2043 Acquiring and Managing Financial Resources
  - Any 3 hour computer course
  - Any 3 hour MKTG 3000 level or above
  - CATE 4803 Problems in Career & Technical Education (Word Processing)
  - COMM 1313 Fundamentals of Communication
  - MATH 1203 if required (see adviser)
  - 18-24 hours Electives (see adviser for course list)
  - Total 124 hours are required by the University of Arkansas for a degree. 124
- V. Admission requirements for Spring, Senior Year:**
  - 1. Earn a cumulative GPA of 2.5 or higher
  - 2. Passing scores on Praxis I

- 3. Take Praxis II subject matter
- 4. Successful interview with teacher education faculty in the Department of Curriculum and Instruction
  - Note: All students seeking licensure in the state of Arkansas are subject to a criminal background check. Forms for this procedure may be obtained at Peabody Hall, Room 117, at the State Department, or any police station, including the campus police. These background checks take up to six months to process; therefore, students are advised to complete and submit the forms to the proper authorities six months in advance of actually applying for a license. Arkansas will not certify anyone who has been convicted of a felony.

**Business Education Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan in Career and Technical Education (teaching option) with a concentration in Business Education should see page 42 in the Academic Regulations chapter for university requirements of the program.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	†Fine Arts or Humanities
3	MATH 1203 – If required
4	†Science with Lab
3	COMM 1313 Fundamentals of Communication
0	WCOB 1120 Computer Competency Requirement
1	CATE 1001 Practicum in Career & Technical Education
<b>17</b>	<b>Semester hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3	†Fine Arts or Humanities
3	†U.S. History
3	†PSYC 2003 General Psychology
1	PEAC 1621 Fitness Concepts
3	ECON 2013 Principles of Macroeconomics
<b>16</b>	<b>Semester hours</b>
Fall Semester Year 2	
3	ECON 2023 Principles of Microeconomics
3	ENGL 2003 Advanced Composition (or exempt)
3	MATH 2053 Finite Math
2	WCOB 1012 Legal Environment of Business
2	HLSC 1002 Wellness Concepts
4	†Science with Lab
<b>17</b>	<b>Semester hours</b>
Spring Semester Year 2	
3	WCOB 1023 Business Foundations
3	WCOB 1033 Data Analysis and Interpretation
9	Electives
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 3	
3	CIED 3023 Survey of Exceptionalities
3	CIED 3033 Classroom Learning Theory
3	Upper Level Elective
3	Computer course
3	WCOB 2023 Production and Delivery of Goods
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 3	
3	WCOB 2013 Markets and Consumers
3	WCOB 2043 Acquiring and Managing Financial Resources
3	3000-level or above MKTG elective
3	CATE 4803 Problems in Career & Technical Education (Word Processing)
3	Electives
<b>15</b>	<b>Semester hours</b>

Fall Semester Year 4	
3	CATE 4003 Professionalism
3	CATE 4013 Teaching Strategies
3	CATE 4023 Classroom Management
3	CATE 4033 Assessment/Program Evaluation
3	Electives
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 4	
1	CATE 4041 Lab Management
1	CATE 4051 Seminar
12	CATE 406V Teaching Internship
<b>14</b>	<b>Semester hours</b>
<b>124</b>	<b>Total hours</b>

†Core areas must be completed as outlined in Catalog of Studies, see page 40.

**Family and Consumer Sciences Education (FCSE)**

Cecelia K. Thompson  
 Adviser  
 115 Peabody Hall  
 479-575-2581

Students pursuing the Bachelor of Science in Education degree may select the family and consumer sciences education program concentration as a field of specialization in career and technical education.

Completion of the B.S.E. will prepare students to teach family and consumer sciences at the junior high and secondary education level or to prepare students to work in professional careers in the Cooperative Extension Service, business, industry, or social services.

In addition to the general studies, the following courses are required for a concentration in family and consumer sciences education.

	<b>Hours</b>
<b>University Core Requirements for Concentration in Family and Consumer Science</b>	<b>35</b>
Required University Core (see Page 40)	
PSYC 2003 General Psychology	
CHEM 1103/1101L Chemistry I and lab or CHEM 1074/1071L Fundamentals of Chemistry and lab	
HESC 1403 Life Span Development	
HESC 2413 Family Relations	
<b>Professional Education Core</b>	<b>36</b>
CIED 3023 Survey of Exceptionalities	
CIED 3033 Classroom Learning Theory	
CATE 1001 Practicum in CATE	
CATE 4003 Introduction to Professionalism	
CATE 4013 Teaching Strategies	
CATE 4023 Classroom Management	
CATE 4033 Assessment/Program Evaluation	
CATE 4041 Lab Management	
CATE 4051 Seminar	
CATE 406V Teaching Internship (12 hours)	
CIED 1003 Introduction to Technology in Education	
<b>Technical Requirements</b>	<b>45</b>
HESC 1013 Introduction to Clothing Concepts	
HESC 1213 Nutrition	
HESC 1403 Life Span Development	
HESC 2413 Family Relations	
HESC 2112/2111L Foods I	

HESC 2123 Catering Management or HESC 2203 Nutrition for Exercise and Sports  
 HESC 2053 Intro. to Textile Science  
 HESC 2402/2401L Infant and Toddler Development or HESC 2433 Child Development  
 HESC 3423 Adolescent Development  
 HESC 3443 Families in Crisis  
 HESC 4433 Dynamic Family Interaction  
 HESC 3763L Family Resource Management Lab  
 HESC 4453 Parenting and Family Dynamics  
 HESC 4753 Family Financial Management  
 HLSC 1002 Wellness Concepts  
 PEAC 1621 Fitness Concepts  
 CATE 4803 Problems in Career & Technical Education (Housing)

**Electives** (adviser approved) 4-8  
**Total Hours for degree** 124

**Admission requirements for Spring, Senior Year:**

1. Earn a cumulative GPA of 2.5 or higher
2. Passing scores on Praxis I
3. Take Praxis II
4. Successful interview with career and technical education faculty in the Department of Curriculum and Instruction.

Note: All students seeking licensure in the state of Arkansas are subject to a criminal background check. Forms for this procedure may be obtained at Peabody Hall, Room 117, at the State Department, or any police station, including the campus police. These background checks take up to six months to process; therefore, students are advised to complete and submit the forms to the proper authorities six months in advance of actually applying for a license. Arkansas will not certify anyone who has been convicted of a felony.

**Family and Consumer Sciences Education Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan in Career and Technical Education with a concentration in Family and Consumer Sciences Education should see page 42 in the Academic Regulations chapter for university requirements of the program.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	Math 1203 College Algebra
3	†US History
3	HESC 1403 Lifespan Development
4-5	† <i>Chemistry with Lab</i>
<b>16-17</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
4	†Science with Lab
3	†Fine Arts or Humanities
3	HESC 1213 Nutrition
3	<i>HESC 1013 Introduction to Clothing Concepts</i>
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
1	CATE 1001, Practicum in CATE
3	HESC 2112/2111L Foods I and Foods I Lab
3	†Fine Arts or Humanities 3 hrs
3	PSYC 2003 General Psychology
3	CIED 1003 Introduction to Technology in Education

3	HESC 4753, Family Financial Management
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 2</b>	
0-3	ENGL 2003 Advanced Composition (or exempt)
3	HESC 2053 Introduction to Textile Science
3	HESC 2413 Family Relation
2	HLSC 1002 Wellness Concepts
1	PEAC 1621 <i>Fitness Concepts</i>
3	HESC 2203 Nutrition for Exercise and Sports or HESC 2123 Catering Management
<b>12-15</b>	<b>Semester Hours</b>
<b>Fall Semester Year 3</b>	
3	HESC4453 Parenting and Family Dynamics
3	HESC 2402/2401L Infant and Toddler Development
3	CIED 3033 Classroom Learning Theory
3	HESC 3443 Families in Crisis
3	Elective
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
3	HESC 3423 Adolescent Development
3	HESC 4433 Dynamic Family Interaction
3	HESC 2433 Child Development
3	CATE 4803 Problems in CATE (Housing)
3-4	Elective
<b>15-16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	CIED 3023 Survey of Exceptionality
3	CATE 4003 Introduction to Professionalism
3	CATE 4013 Teaching Strategies
3	CATE 4023 Classroom Management
3	CATE 4033 Assessment/Program Evaluation
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
1	CATE 4041 Lab Management
1	CATE 4051 Seminar
12	CATE 406V Teaching Internship
<b>14</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

†University Core areas must be completed as outlined in Catalog of Studies, see page 40.

### Technology Education (TEED)

Vinson Carter  
Adviser  
116 Peabody Hall  
479-575-3076

A Bachelor of Science in Education degree with a concentration in Technology Education is a licensure program that prepares students to teach technology, pre-engineering, or other technical subject matter at the high school, middle-level, or community college. Additionally, the program prepares one to enter mid-level technical/management careers in business and industry. The concentration is a specialized field of study within the Career and Technical Education program at the University of Arkansas.

**University Core Requirements (State Minimum Core)**  
**See Page 40**

Science concentration of core must include:  
CHEM 1103/1101L University Chemistry

**Hours**  
35

PHYS 2013/2011L College Physics  
MATH 2043 Survey of Calculus

### Technical Requirements

TEED 1103 The Nature of Technology  
TEED 2103 Technology and Society  
GNEG 1111 Introduction to Engineering I  
GNEG 1121 Introduction to Engineering II  
TEED 3103 Technological Research, Experimentation, and Trouble-Shooting  
TEED 4103 Engineering Design Capstone  
GNEG 1122 Introduction to CAD  
TEED 3303 Energy, Power, and Transportation  
TEED 3203 Information and Communication Systems  
INEG 3513 Manufacturing Design and Processes  
ELEG 2903 Digital Design  
CVEG 4513 Construction Management

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### Professional Education

COMM 1313 Fundamentals of Communication  
CIED 1003 Introduction to Technology in Education  
CATE 1001 Practicum in CATE  
CIED 3023 Survey of Exceptionalities  
CIED 3033 Classroom Learning Theory  
CATE 4003 Professionalism  
CATE 4013 Teaching Strategies  
CATE 4023 Classroom Management  
CATE 4033 Assessment/Program Evaluation  
CATE 4041 Lab Management  
CATE 4051 Seminar  
CATE 406V Teaching Internship (12 hours)

39

### Technical Electives

### Total Hours

16-19  
124

Internship Semester (Spring Semester/Senior Year) Admission Criteria:

1. Candidate must hold a cumulative GPA of 2.50 or higher
2. Candidate must have taken and passed the Praxis I examination during the previous semester or earlier
3. Candidate must have taken and passed the Praxis II content examination during the previous semester or earlier
4. Candidate must complete a successful "internship admission interview" with Career & Technical Education faculty. Note these interviews are scheduled with all senior students during the fall semester.

Note: All students seeking licensure in the State of Arkansas are subject to a criminal background check. Forms needed to complete this procedure may be obtained in Room 117 of Peabody Hall on the University of Arkansas campus. These forms may also be obtained from any police station (including the University of Arkansas Police station) or directly from the Arkansas State Department. These background checks take up to six months to process; therefore, students are advised to complete and submit the forms to the proper authorities at least six months in advance of graduation (or six months prior to applying for a teaching license). Arkansas will not grant a teaching license to anyone who has been convicted of a felony.

### Technology Education Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan in Technology Education should see page 42 in the Academic Regulations chapter for university requirements of the program.



Fall Semester Year 1	
3	ENGL 1013 Composition I
1	GNEG 1111 Introduction to Engineering I
3	PSYC 2003 General Psychology
2	GNEG 1122 Introduction to CAD
3	† U.S. History
1	CATE 1001 Practicum in Career & Technical Education
<b>13</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
1	GNEG 1121 Introcuton to Engineering II
2	ELEG 2903 Digital Design
3	TEED 1103 The Nature of Technology
3	MATH 2043 Survey of Calculus
2	Technical Elective Course ***
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 2	
4	PHYS 2013/2011L College Physics with lab
3	† Fine Arts or Humanities
3	COMM 1313 Fundamentals of Communication
3	TEED 2103 Technology & Society
3	CIED 1003 Introduction to Technology in Education
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	ENGL 2003 Advanced Composition (or exempt**) If exempt take additional (3) Technical Elective Course***
4	CHEM 1103/1101L University Chemistry I wit lab
3	TEED 3103 Tech. Research, Experimentation, & Trouble-shooting
3	† Fine Arts or Humanities
3	† Social Science
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 3	
3	CIED 3023 Survey of Exceptionalities
3	CIED 3033 Classroom Learning Theory
3	TEED 3203 Information and Communications Systems
3	INEG 3513 Manufacturing Design and Processes
3	Technical Elective Course***
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	TEED 3303 Energy, Power, & Transportation
3	† Social Science
3	Technical Elective Course***
3	Technical Elective Course***
2	Technical Elective Course***
<b>14</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	TEED 4103 Eng. Design for TE Capstone
3	CATE 4003 Professionalism
3	CATE 4013 Teaching Strategies
3	CATE 4023 Classroom Management
3	CATE 4033 Assessment & Program Evaluation
3	CVEG 4513 Construction Management
<b>18</b>	<b>Semester Hours</b>
Spring Semester Year 4	
1	CATE 4041 Lab Management
1	CATE 4051 Seminar
12	CATE 406V Teaching Internship (12 hours)
<b>14</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

## Competency-Based Teacher Development (CBTD)

Vinson Carter  
Adviser  
116 Peabody Hall  
479-575-3076

### Competency-Based Teacher Development (CBTD) Concentration

This concentration should be selected by incumbent (in-service) trade and technical instructors who desire to obtain a Bachelor of Science in Education degree or become certified as a master instructor in the post-secondary vocational and secondary school systems. CBTD concentration utilizes the online teacher development courses and is field-based.

## CHILDHOOD EDUCATION (ELED)

- Associate Professors Collier, Imbeau
- Clinical Associate Professor Eilers
- Assistant Professors Kirkpatrick, Penner-Williams, Wissehr
- Clinical Assistant Professor Mounts
- Clinical Instructors Bell (K.), Owen, Kerr, Kindall, Smith (D.)
- Instructor Riggs (S.)

The Department of Curriculum and Instruction offers programs that prepare candidates for initial teacher licensure in Childhood Education. The B.S.E. degree in Childhood Education is not an initial teacher licensure program but instead leads to the Master of Arts in Teaching (M.A.T.), which is the initial teacher licensure preparation program. Information about the M.A.T. degree program can be found in the University of Arkansas Graduate Catalog. Candidates seeking entry into the Childhood Education program will be advised in the Boyer Center for Student Services until admission to the junior year of the program, at which time they will be assigned a faculty adviser.

Admission to the B.S.E. in Childhood Education is limited and consists of a three-stage process.

### Stage I: Pre-Childhood Education

1. Complete all program pre-requisites including the first 62 or 63 hours of the 8-semester plan (see 8-semester table below)
2. Obtain a minimum of 2.7 GPA on the 62 or 63 hours of pre-requisite courses, either from the UA or on transfer coursework.
3. Complete the following courses with a "C" or better: CIED 1002/1011, MATH 1203, ENGL 1013, and ENGL 1023.
4. Obtain a passing score on the Math, Reading, and Writing sections of the Praxis I.

### Stage II: Admission to the Childhood Education Program

Admission to the Childhood Education Program occurs after completion of all Pre-Childhood Education requirements and prior to the beginning of the fall semester of the junior year. Applications to the Childhood Education (ELED) program must be submitted by January 30th.

The application process includes:

1. Submission of Childhood Education application.
2. Submission of transcripts for all coursework.
3. Oral Interview.
4. Submission of Writing and Editing Samples.
5. Submission of passing score on Math, Reading, and Writing sections of Praxis I Exam.

### Stage III: Requirements for Progression to Senior Coursework.

1. Declaration of endorsement area of ESL or SPED.
2. Cumulative GPA of 2.7.
3. All non-methods math, science, social studies and HESC courses as well as CIED 3003/3001 and CIED 3263 must be completed prior to senior year.

**Master of Arts in Teaching (M.A.T.)**

The Masters of Arts in Teaching (M.A.T.) is the degree that leads to initial teacher licensure. This is a graduate program and applicants must meet the admission requirements of the Graduate School. Applicants must have completed all requirements for the B.S.E. by the end of spring semester to be considered for admission into the M.A.T., which is a year-long field-based degree that starts during the summer prior to the regular fall-spring academic year.

M.A.T. candidates will be advised by faculty advisers.

Admission requirements:

1. Admission to the University of Arkansas Graduate School.
2. Submission of M.A.T. Application.
3. Cumulative GPA of 3.0 on the last 60 hours of coursework.  
Including any transfer work or grade forgiveness.
4. Passing score on Praxis II, Early Childhood: Content Knowledge (10022).
5. Passing score on M.A.T. entrance portfolio.
6. Successful interview with M.A.T. admission committee.

NOTE: Requirements for teacher licensure vary from state to state and may differ from teacher preparation programs. Please note that Arkansas requires all applicants to successfully complete a criminal background check. Arkansas Teacher Licensure requirements can be found at <http://arkansased.org/teachers/licensureinitial.html>.

NOTE: All professional education courses in CIED must have a grade of "C" or better. No teaching methods courses may be taken by correspondence. CIED 3103, 3113, 3123, and 4153 are offered in the fall only. CIED 3133, 3143, 4101, and 4113, are offered in the spring semester only.

<b>Childhood Education Requirements</b>	<b>Hours</b>
<b>ESL option</b>	
University Core (State Minimum Core)	35
*Specifically required University Core for Childhood Education majors (see below)	
General Studies	9-10
WLIT (3 hrs) World Literature	
HLSC 1002 Wellness Concepts or HLSC 1103 Personal Health and Safety	
PEAC 1621 Fitness Concepts	
ENGL 2003 Advanced Composition	
NOTE: All professional education courses in CIED must have a grade of "C" or better. Enrollment in upper-division professional education courses may be limited. Contact advisers for specific details. No teaching methods courses may be taken by correspondence.	
Childhood Education/Communication	28 - 29
CIED 3123 Math Methods	
CIED 3133 Integrated Social Studies	
CIED 3143 Teaching Science	
CIED 4101 Practicum	
CIED 4113 Integrated Communication Skills	
CIED 4153 Classroom Management	
CIED 3003/3001 Early Childhood Ed/Practicum or HESC 3402/3401L Child Guidance	
CIED 3263 Language Development for the Educator	
HESC 2433 Child Development	
COMM 1313 Fundamentals of Communication	

**Interdisciplinary Studies**

16

- Mathematics (in addition to MATH 1203)
  - MATH 2213 Math Structures I
  - MATH 2223 Math Structures II
- General Science (12 hours)
  - \*BIOL 1543/1541L Principles of Biology
  - \*GEOL 1113/1111L General Geology/Lab
  - Physical science course with laboratory
- Social Science (18 hours)
  - ECON 3053 Economics for Elementary Teachers or any Economics course\*\*
  - 3 hours Geography \*\*
  - \*PLSC 2003 American National Government
  - \*PSYC 2003 General Psychology
- Arkansas History
  - HIST 3383 Arkansas and the Southwest or any Arkansas history course
  - History (select one of the following):
    - \*HIST 2003 Hist/American People to 1877
    - \*HIST 2013 Hist/American People, 1877 to Present

**Pre-Education Core**

18

- CIED 1002 Introduction to Education
- CIED 1011 Introduction to Education Practicum
- CIED 3023 Survey of Exceptionalities
- CIED 3033 Classroom Learning Theory
- CIED 1003 Introduction to Technology in Education or any 3-hour computer course
- CIED 3103 Children's Literature
- CIED 3113 Emergent and Developmental Literacy

**Aesthetics**

6

- 6 hours fine arts or humanities, 3 hours of which must meet university core requirements
- CIED 4413 Acquiring a Second Language
- CIED 4423 Teaching a Second Language

**Electives**

11-15

**Total for Childhood Education**

**124-125**

\*\* Students should meet with adviser to determine University Core requirements.

**Childhood Education Requirements**

**Hours**

**SPED option**

- University Core (State Minimum Core)
- \*Specifically required University Core for Childhood Education major (see below)
- General Studies
- WLIT (3 hrs) World Literature\*\*
- HLSC 1002 Wellness Concepts or HLSC 1103 Personal Health and Safety
- PEAC 1621 Fitness Concepts
- ENGL 2003 Advanced Composition

NOTE: All professional education courses in CIED must have a grade of "C" or better. Enrollment in upper-division professional education courses may be limited. Contact advisers for specific details. No teaching methods courses may be taken by correspondence.

**Childhood Education/Communication**

28-29

- CIED 3003/3001 Early Childhood Ed./Practicum or HESC 3402/3401L Child Guidance/Lab
- CIED 3123 Math Methods
- CIED 3133 Integrated Social Studies

CIED 3143 Teaching Science	
CIED 3263 Language Development for the Educator	
CIED 4101 Practicum	
CIED 4113 Integrated Communication Skills	
CIED 4153 Classroom Management	
HESC 2433 Child Development	
COMM 1313 Fundamentals of Communication	
<b>Interdisciplinary Studies</b>	16
Mathematics (in addition to MATH 1203)	
MATH 2213 Math Structures I	
MATH 2223 Math Structures II	
General Science (12 hours)	
*BIOL 1543/1541L Principles of Biology	
*GEOL 1113/1111L General Geology/Lab	
Physical science course with laboratory	
Social Science (18 hours)	
ECON 3053 Economics for Elementary Teachers or any Economics course**	
3 hours Geography**	
*PLSC 2003 American National Government	
*PSYC 2003 General Psychology	
Arkansas History	
HIST 3383 Arkansas and the Southwest or any Arkansas history course	
History (select one of the following):	
*HIST 2003 History of the American People to 1877	
*HIST 2013 History of the American People, 1877 to Present	
<b>Pre-Education Core</b>	18
CIED 1002 Introduction to Education	
CIED 1011 Introduction to Education Practicum	
CIED 3023 Survey of Exceptionalities	
CIED 1003 Introduction to Technology in Education or any 3-hour computer course	
CIED 3033 Classroom Learning Theory	
CIED 3103 Children's Literature	
CIED 3113 Emergent and Developmental Literacy	
<b>Aesthetics</b>	6
6 hours arts or humanities, 3 hours of which must meet university core requirements**	
CIED 4513 Teaching Children with Mild Disabilities	
CIED 4523 Teaching Children with Severe Disabilities	
<b>Electives</b>	11-15
<b>Total for Childhood Education</b>	<b>124-125</b>
** Students should meet with adviser to determine University Core requirements	

**Childhood Education Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

ENGL 2003 Advanced Composition is required unless exemption is gained in one of three ways, either by demonstrating a satisfactory writing ability on the Advanced Composition Exemption Examination, by completing ENGL 2013, or by achieving a grade of "A" or "B" in ENGL 1013 and a grade of "A" in ENGL 1023 in courses taken at University of Arkansas.

Fall Semester Year 1	
3	†ENGL 1013 Composition I
3	†MATH 1203 College Algebra (or higher)
4	BIOL 1543/1541L Principles of Biology w/lab or GEOL 1113/1111L

2-3	HLSC 1002 Wellness Concepts or HLSC 1103
1	PEAC1621 Fitness Concepts
3	PLSC 2003 American Nat'l Gov't or HIST 2003 or 2013
<b>16-17</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	†ENGL 1023 Composition II
3	MATH 2213 Math Structures I
4	GEOL 1113/1111L General Geology w/lab or BIOL 1543/1541L
2	†CIED 1002 Introduction to Education
1	†CIED 1011 Practicum
3	PSYC 2003 General Psychology
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	Fine Arts or Humanities Elective
3	HESC 2433 Child Development
3	†CIED 3023 Survey of Exceptionality
3	HIST 2003 or 2013 or PLSC 2003
3	†COMM 1313 Fundamentals of Communications
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 2	
4	Physical Science w/lab
3	CIED 1003 Introduction to Technology in Education or any computer course
2	Electives
3	MATH 2223 Math Structures II
3	†CIED 3033 Classroom Learning Theory
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 3	
3	HIST 3383 Arkansas and the Southwest
3	ECON 3053 Economics for Elem. Teachers or any economics course
3	WLIT 3 hours
3-4	†CIED 3003/3001 Early Childhood Education or HESC 3402/3401L Child Guidance/Lab
3	Electives
<b>15-16</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	†CIED 3263 Language Development/Educator
3	Any GEOG course
3	Fine Arts or Humanities Elective
3	Electives
3	†ENGL 2003 Advanced Composition (if required) or elective
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 4	
3	†*CIED 3103 Children's Literature
3	†*CIED 3113 Emergent & Developmental Literacy
3	†*CIED 3123 Math Methods
3	†*CIED 4153 Classroom Management
3	ESL Elective or Special Education Elective
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	†*CIED 4113 Integrated Communication Skills
3	†*CIED 3133 Integrated Social Studies
1	†*CIED 4101 Practicum
3	†*CIED 3143 Teaching Science
3	ESL Elective or Special Education Elective
3	Electives
<b>16</b>	<b>Semester Hours</b>
<b>124-125</b>	<b>Total Hours</b>

† A grade of C or better is required for these courses

\* 2.7 GPA cumulative and admission to Stage III required for these courses.

<b>M.A.T. Degree Program Requirements</b>	<b>Hours</b>
ESL option	33
Required Courses for the M.A.T. Core	10
CIED 5013 Measurement/Research/Statistical Concepts for Teachers	
CIED 5022 Classroom Management Concepts for Teachers	
CIED 5032 Curriculum Design Concepts for Teachers	
CIED 5053 Multicultural Issues in Elementary Education	
Additional Program Requirements	23
CIED 5003 Childhood Seminar	
CIED 5073 Case Study in Childhood Education	
CIED 5173 Literacy Assessment and Intervention	
CIED 5162 Applied Practicum	
CIED 508V Childhood Education Cohort Teaching Internship (6 hours)	
CIED 5943 Teaching People of Other Cultures	
CIED 5953 Secondary Language Assessment	
CIED 5343 Applied Classroom Management	
CIED 5873 Assessment of Persons with Disabilities	

**M.A.T. Degree Program Requirements**

SPED option	<b>Hours</b>
Required Courses for the M.A.T. Core	10
CIED 5013 Measurement/Research/Statistical Concepts for Teachers	
CIED 5022 Classroom Management Concepts for Teachers	
CIED 5032 Curriculum Design Concepts for Teachers	
CIED 5053 Multicultural Issues in Elementary Education	
Additional Program Requirements	23
CIED 5003 Childhood Seminar	
CIED 5073 Case Study in Childhood Education	
CIED 5183 Readings in Early Childhood Education	
CIED 5162 Applied Practicum	
CIED 508V Childhood Education Cohort Teaching Internship (6 hours)	
CIED 5343 Applied Classroom Management	
CIED 5873 Assessment of Persons with Disabilities	

NOTE: Enrollment in the M.A.T. with an emphasis in childhood education is limited. A passing score on the appropriate Praxis test is a requirement to begin the M.A.T. A passing score on an additional Praxis test is a requirement to graduate from the M.A.T. (Students must consult with their advisers to determine the appropriate Praxis exams to take for admission and graduation.) Other specific application procedures and selection criteria are available in the Department of Curriculum and Instruction, 214 Peabody Hall or from childhood education faculty advisers.

**ELEMENTARY EDUCATION (ELEL)**

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The Department of Curriculum and Instruction also offers the B.S.E. in elementary education licensure program. Students enrolled in this program typically complete all or most of their first two years of study at NorthWest

Arkansas Community College (NWACC) prior to admission to the program. The final two years of the program are University of Arkansas courses offered at the University of Arkansas Global Campus in Rogers, Arkansas.

**Academic Requirements for Elementary Education Majors**  
**Pre-Admission:**

Candidates will complete the first two years of study at NorthWest Arkansas Community College. They will establish a GPA of 2.70 or better in the prerequisite courses and pass Praxis I. Applicants must also hold a valid CPR card for both children and adults. The deadline for application to the University of Arkansas course portion of this program and submission of Praxis scores is April 15 prior to fall enrollment. Once the application materials are received, candidates will participate in an oral interview with program faculty. Eligibility to enroll in University of Arkansas courses is contingent upon successfully completing all requirements in the Pre-Admission phase.

**University of Arkansas Coursework Progression**

Candidates will enroll in University of Arkansas courses and maintain a GPA of 2.7 or better. They will be required to pass both Praxis II: Early Childhood Content Knowledge in the junior year and Praxis II: Principles of Learning and Teaching Early Childhood in the senior year. This degree includes approximately 9 months of student teaching experiences in a Rogers, Bentonville, or Springdale elementary school. Senior level candidates must therefore attend full-time.

All professional education courses in CIED must have a grade of "C" or better. No teaching methods courses may be taken by correspondence.

**Elementary Education Requirements****Prerequisites:**

The course numbers listed for the prerequisites are Northwest Arkansas Community College course numbers:

Courses in parentheses to the right of the University of Arkansas course below are the course pre-fixes and numbers of NWACC equivalents.

ARHS 1003 Art Appreciation or ART 1033 Introduction to Art Studio

BIOL 1544 Principles of Biology/lab

CHED 1003 Foundations and of Early Childhood Education

CIED 1002 Introduction to Education

CIED 1001 Practicum

COMM 1313 Fundamentals of Communication

ENGL 1013 Composition I

ENGL 1023 Composition II

ETEC 2003 Educational Technology and lab

ENGL 2213 Survey of World Literature to 1650 or ENGL 2223 Survey of World Literature from 1650

GEOG 1123 Human Geography

CHED 2033 Child Development

HIST 2003 or 2013 U.S. History

HIST 2053 History of Arkansas

HLSC 1002 Wellness Concepts

MATH 1204 College Algebra

MATH 2213 Math Structures I

MATH 2223 Math Structures II

PLSC 2003 American Government

PSYC 2003 General Psychology

ENGL 2213 Survey of World Literature to 1650 or ENGL 2223 Survey of World Literature from 1650

Any 4-hour physical science course with lab that satisfies University of Arkansas core.

**University of Arkansas Childhood Education Courses**

- ENGL 2003 Advanced Composition must be taken at University of Arkansas if not exempted
- CIED 3023 Survey of Exceptionalities
- CIED 3033 Classroom Learning Theory
- CIED 3003 Early Childhood Education
- CIED 3001 Early Childhood Education Practicum
- CIED 3103 Children’s Literature
- CIED 3123 Mathematics Methods
- CIED 3113 Emergent and Developmental Literacy
- CIED 4113 Integrated Communication Skills
- CIED 3143 Teaching Science
- CIED 3133 Integrated Social Studies
- CIED 4101 Practicum
- CIED 3263 Language Development for Educators
- CIED 4143 Curriculum Design
- CIED 4323 Instructional Design for Teachers
- CIED 4173 Student Teaching (two semesters)
- CIED 4153 Classroom Management
- CIED 4133 Research, Measurement, & Readings
- CIED 4163 Senior Project
- CIED 4003 Elementary Seminar
- CIED 4423 Teaching a Second Language
- Total 124 Hours

**Elementary Education Nine-Semester Degree Program**

The first two years of classes are taken at NorthWest Arkansas Community College, therefore the course numbers listed for the first two years are NWACC course numbers. Beginning with the Fall Semester of Year 3, University of Arkansas course numbers are listed.

B.S.E. students will apply to the University of Arkansas and request the transfer of freshman and sophomore credits to the University of Arkansas during the semester before their junior year. The University accepts transfers of no more than 68 lower division credit hours. Taking freshman or sophomore courses directly from University of Arkansas (as a correspondence course) may prevent you from exceeding this 68 credit-hour transfer limit.

Fall Semester Year 1	
3	ENGL 1013 English Composition I
4	MATH 1204 College Algebra
4	BIOL 1544 Principles of Biology/Lab
3	COMM 1313 Fundamentals of Communication
3	CHED 1003 Foundations & theories in ECE
<b>17</b>	<b>Semester hours</b>
Spring Semester Year 1	
3	ENGL 1023 English Composition II
3	HIST 2053 History of Arkansas
3	MATH 2213 Math Structures I
2	CIED 1002 Introduction to Education
1	CIED 1001 Practicum
3	PSYC 2003 General Psychology
2	HLSC 1002 Wellness Concepts
<b>17</b>	<b>Semester hours</b>
Fall Semester Year 2	
3	ARHS 1003 Art Appreciation or ART 1033 Intro to Art Studio
4	Physical science course with lab
3	HIST 2003 or 2013 U.S. History
3	MATH 2223 Math Structures II
<b>13</b>	<b>Semester hours</b>

Spring Semester Year 2	
3	ETEC 2003 Educational Technology and lab
3	GEOG 1123 Human Geography
3	PLSC 2003 American Government
3	CHED 2033 Child Development
3	ENGL 2213 or 2223 Survey of World Literature to 1650 or from 1650
<b>15</b>	<b>Semester hours*</b>
Fall Semester Year 3	
3	CIED 3023 Survey of Exceptionalities
3	CIED 3033 Classroom Learning Theory
3	CIED 3143 Teaching Science
3	CIED 3003 Early Childhood Education
1	CIED 3001 Practicum
3	CIED 3103 Children’s Literature
<b>16</b>	<b>Semester hours</b>
Spring Semester Year 3	
3	ENGL 2003 Advanced Composition if not exempted**
3	CIED 3263 Language Development for the Educator
3	CIED 3123 Mathematics Methods
3	CIED 3113 Emergent & Develop Lit
3	CIED 3133 Integrated Social Studies
1	CIED 4101 Practicum
<b>16</b>	<b>Semester hours</b>
Summer Semester Year 3	
3	CIED 4113 Integrated Communication Skills
3	CIED 4133 Measurement, Research, and Readings
<b>6</b>	<b>Semester hours</b>
Fall Semester Year 4	
3	CIED 4173 Student Teaching
3	CIED 4153 Classroom Mgmt.
3	CIED 4143 Curriculum Design
3	CIED 4323 Instructional Design/Teachers
<b>12</b>	<b>Semester hours</b>
Spring Semester Year 4	
3	CIED 4173 Student Teaching
3	CIED 4163 Senior Project
3	CIED 4003 Elementary Seminar
3	CIED 4423 Teaching a Second Language
<b>12</b>	<b>Semester hours</b>
<b>127</b>	<b>Total Hours</b>

\* B.S.E. students will apply to the University of Arkansas and request the transfer of freshman and sophomore credits to UA during the semester before their junior year. UA accepts transfers of no more than 68 lower division credit hours. Taking freshman or sophomore courses directly from UA (as a correspondence course) may prevent you from exceeding this 68 credit-hour transfer limit.

\*\* The University of Arkansas requires that all students take ENGL 2003 Advanced Composition or ENGL 1013 Essay Writing on the UA campus before graduation unless the student has passed the Advanced Composition Exemption Exam. This exam is available at the NorthWest Arkansas Community College Testing Center. Essay Writing (ENGL 2013) is available as a correspondence course at <http://offcampus.uark.edu>.

Online delivery of Masters of Education in Elementary Education is available. Information can be found in the University of Arkansas *Graduate School Catalog*.

SEE PAGE 327 FOR CURRICULUM AND INSTRUCTION (CIED) COURSES.

## ELEANOR MANN SCHOOL OF NURSING (NURS)

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- Professors Kippenbrock, Neighbors
- Associate Professors Barta, Smith-Blair
- Assistant Professors Buron, Odell
- Clinical Associate Professor Lawson
- Instructors Agana, Malm, McHenry, Miller, Murphy, Scott, Sisson

The mission of the Eleanor Mann School of Nursing is to promote the health of society through education of professional nurses, research, and service. In recognition of the interrelationship between teaching, research, service, and the practice of nursing, in the changing health care needs of society, the faculty aspires toward excellence in teaching, contributes to research in nursing, and promotes improved health care.

Professional nursing begins with a Bachelor of Science degree. Nursing education offers a research base for nursing practice that promotes the ability of the nurse to effect change needed to improve health. In the study of professional nursing, the student builds on a planned general education for the academic disciplines and acquires theoretical and specific knowledge to meet health care needs. In addition, the curriculum provides opportunity for students with technical nursing education to expand their knowledge and scope of practice. The baccalaureate program establishes a foundation for graduate education in nursing and for continued personal and professional development. The curriculum provides the student with a theoretical base to practice professional nursing with diverse clients in various settings through the roles of caregiver, manager, and teacher. The program of study has been designed to emphasize one or more of these roles in each nursing course.

Graduates of the program are eligible to apply to take the National Council Licensure Examination (NCLEX-RN) for licensure as a registered nurse (R.N.). Persons convicted of a crime may not be eligible to take the NCLEX-RN examination. A criminal background check is required before admission to the program and before graduation. A negative drug screen must be submitted prior to admission and each semester while in the program. The Bachelor of Science in Nursing degree (B.S.N.) is awarded after successful completion of the nursing curriculum.

### ADMISSION TO THE B.S.N. PROGRAM

#### Admission Policies

##### Conditional Admission to the B.S.N. Program

Admission to the B.S.N. program is limited. Conditional admission will be determined by the Eleanor Mann School of Nursing faculty. Admission requirements for the professional program of study are as follows:

1. Overall minimum grade-point average (GPA) of 3.00. The GPA is the most important factor for admission selection.
2. Students will be ranked according to GPA and selected for conditional admission to the program based on GPA rank.
3. The GPA will be computed on all prerequisite courses for nursing only, whether they are from the University of Arkansas or transfer hours.
4. If the student is a second degree student, an additional 0.1 point will be added to the GPA for the student for admission ranking.

5. Applications for admission must be submitted between October 15 and December 1 to be considered for fall semester admission and between April 15 and June 1 for spring semester admission. Late applications will be considered on a space-available basis.
6. Students must meet the performance standards for the professional program of study.
7. Students transferring from another nursing program must provide a letter from the nursing program that they are eligible to return and in good standing to be considered for admission.

##### Full Admission to the B.S.N. Program

Full admission to the Eleanor Mann School of Nursing is contingent upon successfully meeting the following requirements:

1. All prerequisite coursework for a fall admission into the Professional Program of Study in Nursing must be completed by the end of the spring semester with the exception of the three pre-nursing courses (NURS 2012, NURS 2022, NURS 2032), which may be taken in the summer session prior to entering the program of study in nursing in the fall. (All coursework for spring admission must be completed by the end of the fall semester prior to entering the Professional Program of Study in Nursing in the spring, as already required.)
2. Proof of the following:
  - a) CPR certification (American Heart Association Basic Certified Life Support and Automated Emergency Defibrillation CPR for Health Care Providers)
  - b) Completed Hepatitis B vaccine with dates of each injection or immune titer if vaccine received 10 years ago. Three (3) HBV injections are needed. Students are required to have obtained HBV Injection 1 within two weeks of the beginning of the scheduled semester, followed by Injection 2 in one month, and Injection 3 within six months of Injection 1, in order to enter the clinical setting. A student who fails to obtain the complete series (3 injections), according to the Center for Disease Control (CDC) established timeframe, will not be permitted to participate in patient care contact required in clinical experiences.
  - c) Negative Tuberculin skin test or negative chest X-ray result within two years if student has ever tested positive for tuberculosis.
  - d) Diphtheria-Tetanus (DT) required.
  - e) Health insurance: Students must submit proof of current coverage.
  - f) Liability insurance is provided through an established student fee at the University of Arkansas.
  - g) A criminal background check is required. Results will be reported to the college administration and school officials and any health-care facility in which the students are placed as part of the clinical education. An unsatisfactory background check result may lead to denial of admission to the nursing program. The criminal background check must be completed by the end of the semester in which the student receives acceptance into the program.
  - h) A negative drug screen is required within two weeks prior to entrance into the nursing program. Results are reported to the Eleanor Mann School of Nursing. A positive drug screen will lead to denial of admission to the nursing program. Student failure to submit to a drug screen, attempting to tamper with, contaminate, or switch a sample will result in the student not being admitted to the nursing program and will be referred to the Dean of Students in the Division of Student Affairs at the University of Arkansas.

Procedures for the criminal background check and the drug screen are available on the Eleanor Mann School of Nursing Web site: <http://nurs.uark.edu/4208.htm>.

**R.N. to B.S.N. Admission Policies**

1. College admission requirements.
2. Eleanor Mann School of Nursing admission policies.
3. Completion of the general education studies. (R.N. students who have completed 45 hours of the required general studies may petition for exception to the nursing admission policy if MATH 1203, EDFD 2403, and NURS 2012 have been completed.)
4. Graduation from an Arkansas State Board of Nursing approved program or an accredited out-of-state program.
5. Review of nursing courses for transfer credit by the School of Nursing.
6. Proof of, and maintenance of, unencumbered licensure to practice as a Registered Nurse in Arkansas.
7. Requirements necessary to receive advanced placement may vary with length of time since graduation and length of time of (or since) nursing employment.
8. Credit for courses listed below will be held in escrow. The student will receive credit for these courses upon successful completion of the program.  
NURS 2032  
NURS 3212  
NURS 3313  
NURS 3422/3424  
NURS 3634/3643  
NURS 3742/3752  
NURS 3841L  
NURS 4154/4164  
NURS 4443/4453

R.N. students will be considered as a separate group for admission purposes.

**L.P.N./L.P.T.N. to B.S.N. admission policies**

1. College admission requirements.
2. Eleanor Mann School of Nursing admission policies.
3. Completion of an Arkansas State Board-approved L.P.N. or L.P.T.N. program or an NLNAC accredited out-of-state program.
4. Review of nursing courses for transfer credit by the School of Nursing.
5. Proof of, and maintenance of, an unencumbered license to practice as an L.P.N. or L.P.T.N. in the state of Arkansas.
6. Advanced placement may vary based on the length of time since completion of the L.P.N. or L.P.T.N. and the length of time of (or since) nursing employment.
7. Credit for courses listed below will be held in escrow. The student will receive credit for these courses upon successful completion of the program.  
NURS 3313  
NURS 2032  
NURS 3422/3424
8. Students may receive credit for NURS 3634/3643 through validation examination.

L.P.N./L.P.T.N. students will be considered as a separate group for admission purposes.

**Progression, Withdrawal, and Dismissal**

1. For progression in the nursing program, only grades of "C" or above will be accepted. Students who make less than a "C" may not progress into courses for which that course is a prerequisite until the course is repeated and the required minimum grade attained.
2. Students may repeat a specific nursing course only once. If a "D," "F," or "W" is earned on the second attempt, the student will be required

to withdraw from the School of Nursing.

3. No more than two nursing courses within the program of study may be repeated. If the student does not earn a grade of at least "C" upon repeating the course, the student may not enroll in any nursing courses or continue in the School of Nursing.

**Professional Role Implementation Courses**

1. A student who needs to repeat a Professional Role Implementation Course must make petition to the Undergraduate Admission Committee and are encouraged to do so as soon as they are aware of the need to repeat a course.
2. Students will be readmitted on a space-available basis according to the following priority system:

**Priority Groups for Placement in Required Clinical Courses**

- a) First Priority – Continuing full-time students
  - b) Second Priority – Continuing part-time students
  - c) Third Priority – Repeating students who were unable to repeat a course for one or more semesters
  - d) Fourth Priority – Repeating students in the semester immediately following the one in which they failed a nursing course.
3. Spaces in clinical courses are limited and tightly controlled by accreditation, the Arkansas State Board of Nursing, and clinical agency policies. A student re-enrolling in a Professional Role Implementation Course (whether due to illness, course failure, part-time status, or other reasons) will not be assured clinical placement space in subsequent courses.
  4. NOTE: A student dismissed from a Professional Role Implementation Course due to safety, ethical, or dishonesty issues will be administratively withdrawn from all clinical courses, and may be subject to administrative withdrawal from the School of Nursing following full review. Readmission is not guaranteed to these students.

**Readmission Policies**

Any student whose enrollment in the professional program of study has been interrupted may seek readmission following the steps below:

1. Seek readmission into the University of Arkansas (if applicable).
2. Complete Readmission Application to the School of Nursing the semester prior to the semester of intended re-entry into the program (Readmission is limited by space availability).
3. Readmission will not be considered for any student dismissed from the School of Nursing who obtained a "D" or "F" from two (2) nursing courses or who was dismissed from a Professional Role Implementation Course due to safety, ethical, or dishonesty issues. Exceptions to this policy will be considered by the Undergraduate Admissions Committee on an individual basis.

**Exit Policies**

1. Students must complete the requirements for the degree within five years of enrolling in the first upper-division nursing course. If the student does not complete the Professional Program of Study within the five-year limit, nursing credits must be reevaluated.
2. All University of Arkansas requirements must be met.

NOTE: In addition to the program requirements, students must meet the University and college graduation requirements. This curriculum is subject to change to comply with national accreditation and the Arkansas State Board of Nursing Standards.

**Requirements for Bachelor of Science in Nursing**

University Core (State Minimum Core) See Page 40

**Hours**  
35

English (6 hours)

ENGL 1013 English Composition I  
ENGL 1023 English Composition II

Mathematics (3 hours)

MATH 1203 College Algebra

Sciences with Labs (8 hours) must include

4 hours of CHEM including a lab

\*BIOL 2443/2441L Human Anatomy

Fine Arts/Humanities (6 hours)

Must include one of the following courses:

PHIL 2003 Intro to Philosophy; PHIL 2103 Intro to Ethics;

PHIL 2203 Logic; or PHIL 3103 Ethics and the Professions

3 hours Core History/Government

Social Sciences (9 hours)

Must include HESC 1403 Lifespan Development

Additional General Studies

\*ENGL 2003 Advanced Composition (unless exempt)

BIOL 2213/2211L Human Physiology

EDFD 2403 Statistics in Nursing, or PSYC 2013 Introduction  
to Statistics for Psychiatry, or STAT 2303 Principles of  
Statistics

\*BIOL 2013/2011L General Microbiology

NURS 2012 Nursing Informatics

NURS 2022 Intro. to Professional Nursing Concepts

NURS 2032 Therapeutic Comm.

\*9-12 elective hours (as needed)

\*BIOL 1543/1541L is a prerequisite for BIOL 2013/2011L  
and BIOL 2443/2441L and may be used as part of the elective  
hours.

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### Professional Nursing Program

#### Role Development (Level I)

NURS 3212 Teaching and Health Promotion

NURS 3313 Pharmacology in Nursing

NURS 3314 Pathophysiology

NURS 3321L Health Assessment

NURS 3422 Nursing Concepts: Foundations of Professional  
Practice

NURS 3424 Professional Role Implementation I: Caregiver

#### Role Concentration (Level II)

NURS 3634 Nursing Concepts: Adult Health and Illness

NURS 3643 Professional Role Implementation II: Caregiver

NURS 3742 Nursing Concepts: Mental Health/Illness

NURS 3752 Professional Role Implementation III: Caregiver

NURS 3841L Professional Nursing Skills: Advanced

NURS 3842 Research in Nursing

NURS 4154 Nursing Concepts: Children and Family

NURS 4164 Professional Role Implementation IV: Teacher

NURS 4242 Management in Nursing

NURS 4263 Nursing Concepts: Older Adult Health and Illness

NURS 4273 Professional Role Implementation V: Manager

#### Role Synthesis (Level III)

NURS 4443 Nursing Concepts: Critical Care

NURS 4453 Professional Role Implementation VI:

Role Synthesis

NURS 4603 Nursing Concepts: Community

NURS 4613 Professional Role Implementation VII:

Role Synthesis

NURS 4712 Seminar in Nursing

**Total for Nursing**

124

NOTE: The minimum number of hours required to receive a baccalaureate degree at the University of Arkansas is 124 semester hours. The Nursing major is exempt from the eight-semester degree plan since the program is admissions-based. There is no guarantee that a student meeting the minimal GPA requirement will be admitted. Please refer to the College of Education and Health Profession's Web site at <http://nurs.uark.edu/index.htm> for specific information related to the admission criteria.

## HEALTH SCIENCE, KINESIOLOGY, RECREATION, AND DANCE

Sharon Hunt

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306 HPER Building

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Dean Gorman

Assistant Department Head

308W HPER Building

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The department offers programs leading to the B.S.E. degree with major emphasis in health science, kinesiology, or recreation.

## DANCE ACTIVITY (DEAC)

• Instructor Mayes

SEE PAGE 337 FOR DANCE ACTIVITY (DEAC) COURSES

## HEALTH SCIENCE (HLSC)

• Professor Jones (C.)

• Assistant Professors Hammig, Henry

• Clinical Assistant Professor Williams

• Visiting Assistant Professors Mink, Rausch, Wyandt

The program in health science is designed to prepare candidates for a variety of career options in the vast field of health education and health promotion. Career opportunities may include planning, development, and delivery of health programs in various settings. These settings may include hospitals, government agencies, nonprofit organizations, community organizations, corporations, and other places of occupation. Graduates of this program should be well prepared to enter the work force at an entry-level position in community health or graduate programs of study in such areas as health education and health promotion, corporate health, public health, health care administration, and other allied health professional schools.

The candidate for the Bachelor of Science in Education degree with a major in health science will focus on community health. All students must complete the University Core requirements as listed on page 40. In addition, all students must take the courses listed below under required general studies for the health science major and the additional health science major requirements. A minimum of 124 semester hours is required for graduation in the major of health science.



<b>Curriculum for a Major in Health Science</b>	<b>Hours</b>
<b>University Minimum Core</b> (State Minimum Core) See page 40	35-36*
English (6-9 hours)	
ENGL 1013 Composition I	
ENGL 1023 Composition II	
Mathematics (3 hours)	
MATH 1203 College Algebra or higher, depending on specific concentration requirements	
Science (8 hours)	
BIOL 1543/1541L Principles of Biology	
*CHEM 1103/1101L University Chemistry I and lab or CHEM 1123/1121L University Chemistry II and lab or CHEM 1074/1071L Fundamentals of Chemistry and lab	
See specific concentration requirements	
Fine Arts/Humanities (6 hours)	
See page 40 for listing of approved courses	
U.S. History (3 hours)	
HIST 2003 History of American People to 1877 or HIST 2013 History of American People 1877 to Present or PLSC 2003 American National Government	
Social Sciences (9 hours)	
PSYC 2003 General Psychology	
SOCI 2013 General Sociology	
3 hours Social Science core elective	
<b>Required general studies for the Health Science Major</b>	10-13**
ENGL 2003 Advanced Composition (exemption by examination or credit in ENGL 201 or grade of at least "B" in ENGL 1013 and "A" in ENGL 1023 at Fayetteville campus). If the student exempts from ENGL 2003, three additional credit hours of electives must be taken to meet the graduation credit-hour requirements.	
Literature Elective (3 hours)	
COMM 1313 Fundamentals of Communication	
HLSC 1103 Personal Health and Safety	
PEAC 1621 Fitness Concepts	
<b>Health Science Major Requirements</b>	76-79*
HESC 1213 Nutrition in Health	
HLSC 1203 Prevention of Drug Abuse	
HLSC 1303 Introduction to Human Sexuality	
HLSC 2613 Foundation of Community Health	
HLSC 2662 Terminology/Health Professions	
HLSC 3633 First Responder-First Aid	
HLSC 3643 Community Health Plan/Promotion	
HLSC 3663 Principles/Practice of Mental Health	
HLSC 3683 Health Care Consumerism	
HLSC 404V Community Health Preceptorship (6 hours)	
HLSC 4603 Application of Health Behavior Theories for Health Education	
HLSC 4623 Human Diseases	
JOUR 1033 Fundamentals of Journalism or ENGL 3053 Technical and Report Writing	
BIOL 2013/2011L General Microbiology	
PSYC 3093 Developmental Psychology	
PSYC Elective except PSYC 2003 (3 hours)	
BIOL 1603/1601L Principles of Zoology and lab, or BIOL 1613/1611L Plant Biology and lab	
BIOL 2213/2211L Human Physiology and lab	

BIOL 2443/2441L Human Anatomy and lab  
 SCWK 3163 On Death and Dying  
 PSYC 4023 Adulthood and Aging, or SCWK 4183 The Elderly Citizen  
 \*7-10 hours of health science electives as needed (adviser approved)

**Total Health Science degree** 124

**Health Science Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan for the Health Science major should see page 42 in the Academic Regulations chapter for university core requirements.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	MATH 1203 College Algebra (or higher)
3	†U.S. History
3	‡Social Science (except PSYC 2003 and SOCI 2013- recommend HESC 2413)
4	BIOL 1543/1541L Principles of Biology with lab
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3	†Fine Arts or Humanities (recommend PHIL 2103)
3	HLSC 1103 Personal Health and Safety
1	PEAC 1621 Fitness Concepts
3	HLSC 2613 Foundations of Community Health
3	HESC 1213 Nutrition in Health
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	HLSC 1203 Prevention of Drug Abuse or HLSC 3643 Community Health Planning and Promotion
3	JOUR 1033 Fundamentals of Journalism or ENGL 3053 Technical and Report Writing
4-5	CHEM 1103/1101L University Chemistry I with lab or CHEM 1132/1121L University Chemistry II with lab or CHEM 1074/1071L Fundamentals of Chemistry with lab
3	PSYC 2003 General Psychology
0-3	ENGL 2003 Advanced Composition (or Exempt)
<b>13-17</b>	<b>Semester Hours</b>
Spring Semester Year 2	
2	HLSC 2662 Terminology for the Health Professions
3	SOCI 2013 General Sociology
3	HLSC 1303 Introduction to Human Sexuality
3	COMM 1313 Fundamentals of Communications
4	BIOL 1603/1601L General Zoology with lab or BIOL 1613/1611L Plant Biology with lab
0-3	Health Science elective (Adviser approved)
<b>15-18</b>	<b>Semester Hours</b>
Fall Semester Year 3	
3	HLSC 3643 Community Health Planning and Promotion or HLSC 1203 Prevention of Drug Abuse
3	HLSC 4623 Human Diseases or HLSC 3663 Principles and Practices of Mental Health
3	PSYC 3093 Developmental Psychology
4	BIOL 2013/2011L General Microbiology with lab
3	Fine Arts or Humanities (recommend HUMN 2003)
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 3	
3	HLSC 3683 Health Care Consumerism or HLSC 4603 Applied Health Behavior Theory in Health Education

4	BIOL 2443/2441L Human Anatomy with lab
3	PSYC Elective (Adviser approved)
3	Health Science Elective (Adviser approved)
<b>13</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	HLSC 3663 Principles and Practices of Mental Health or HLSC 4623 Human Diseases
3	SCWK 3163 On Death and Dying
4	BIOL 2213/2211L Human Physiology with lab
3	Health Science Elective (recommend HLSC 4613)
3	Literature Elective
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
6	HLSC 404V Community Health Preceptorship
3	PSYC 4023 Adulthood and Aging or SCWK 4183 The Elderly Citizen
3	HLSC 3633 First Responder - First Aid
3	HLSC 3683 Health Care Consumerism or HLSC 4603 Applied Health Behavior Theory in Health Education
1	Health Science Elective (recommend HLSC 2101)
<b>16</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

SEE PAGE 356 FOR HEALTH SCIENCES (HLSC) COURSES

## KINESIOLOGY (KINS)

- University Professor Di Brezzo
- Professors Fort, Gorman, Riggs
- Associate Professor Lirgg
- Clinical Associate Professor Kern
- Assistant Professor Calleja, Kluess, Oliver
- Clinical Assistant Professors Bonacci, Smith-Nix
- Instructors Forbess, Mayes

The program in kinesiology is designed to prepare candidates for a variety of career options in the vast field of movement science. Career opportunities may include teaching physical education, coaching, analyzing and prescribing fitness programs, athletic training, or preparation for professional programs in allied health. Graduates of this program should be well prepared to enter graduate programs of study in such areas as pedagogy or adapted physical education, exercise physiology, biomechanics, athletic training, sport management, medical school, physical therapy school, and other allied health professional schools.

The candidate for the Bachelor of Science in Education degree with a major in kinesiology must select one of three concentrations:

- P-12 Teaching Physical Education/Wellness & Leisure
- Exercise Science – Pre-Professional Science
- Applied Exercise Science

All students must complete the state minimum core (University Core) requirements as listed on page 40. In addition, all students must take the required general studies for the kinesiology major and the kinesiology core requirements listed below. As part of the University Core requirements, specific math and science courses are required within the kinesiology major and concentrations. A student preparing to teach in the public schools must select the P-12 teaching concentration and must have a grade point average of 2.5 or greater to enter the senior block. Students interested in obtaining an endorsement in coaching should contact the Coordinator of Teacher Education. Students applying for other post-baccalaureate programs should inquire as to prerequisite requirements. Students majoring in kinesiology with a concentration in exercise science (concentrations II, III) must earn a grade of “C” or better in KINS 3153, KINS 3353, and KINS 3533, and meet the

appropriate concentration requirements. A minimum of 124 semester hours is required for graduation in the major of kinesiology.

<b>Curriculum for all Majors in Kinesiology</b>	<b>Hours</b>
<b>University Core (State Minimum Core) See page 40</b>	<b>35</b>
<b>Required University Core for Kinesiology major</b>	
PSYC 2003 General Psychology	
<b>Required general studies for Kinesiology major</b>	<b>9-10</b>
COMM 1313 Fundamentals of Communication	
HLSC 1002 Wellness Concepts (for exercise science/ pre-professional concentration II) or HLSC 1103 Personal Health and Safety (for P-12 concentration I & applied exercise science concentration III)	
PEAC 1621 (exercise science concentrations II and III)	
3 hour Literature elective	
<b>Kinesiology Core for all Kinesiology Majors</b>	<b>9</b>
KINS 2223 Motor Development	
KINS 3153 Exercise Physiology (for exercise science concentrations II and III)	
KINS 3163 Exercise Physiology: Theory and Application or KINS 3153 Exercise Physiology (for P-12 concentration I)	
KINS 3353 Mechanics of Human Movement	
<b>Concentration I: P-12 Teaching Physical Education/Wellness &amp; Leisure Relationship</b>	<b>68-71</b>
BIOL 1543/1541L Principles of Biology (hours counted in the state minimum core)	
BIOL 2443/2441L Human Anatomy or adviser-approved A&P 1 (hours could be counted in the state minimum core)	
PHED 1003 The P.E. Profession: An Overview	
PHED 2013 Teaching Progressions/Assessment of Basic Skills	
PHED 2023 Teaching Progressions/Assessment of Advanced Skills	
PHED 3001 Practicum I	
PHED 3002 Teaching and Leading Outdoor Recreation and Experiential Activities	
PHED 3022 Teaching Stunts/Tumbling	
PHED 3032 Teaching Rhythms	
PHED 3043 Teaching Fitness	
PHED 3074 Secondary Physical Education	
PHED 3203 Principles and Problems of Coaching	
PHED 3373 Elementary Physical Education	
PHED 3702 Measurement Concepts in Kinesiology	
PHED 3903 PE for Special Populations	
KINS 3373 Phil/Soci Impact on Kinesiology	
KINS 4413 Org/Man/Mktt Skills for Kinesiology	
HLSC 3633 First Responder ñ First Aid	
CIED 3033 Classroom Learning Theory	
CNED 4003 Classroom Human Relations Skills or CNED 3053 The Helping Relationship	
<b>SENIOR BLOCK OF CLASSES (Internship Semester): Admission to Internship Semester - Must apply and be enrolled in PHED 3001 the semester prior to Senior Block; 2.5 overall College GPA or 2.75 KINS/PHED Teacher Education Classes; all parts of Praxis I passed; Completed or registered to take the Praxis II content knowledge exam.</b>	
PHED 4023 Class Management	
PHED 407V Physical Education Teaching Internship (9 hrs)	
PHED 4263 Professional Issues in Teaching Physical Education	
PHED 4731 Senior Seminar	

**Health Electives** (3-6 hours)

See adviser for suggested coursework in HLSC to prepare for licensure exams; suggested to come from HLSC 2101 classes.

**Total hours P-12 degree** 124

Note: All students seeking licensure in the state of Arkansas are subject to a criminal background check. Forms for this procedure may be obtained at Peabody Hall, Room 117, at the State Department, or any police station, including the campus police. These background checks take up to six months to process; therefore, students are advised to complete and submit the forms to the proper authorities six months in advance of actually applying for a license. Arkansas will not certify anyone who has been convicted of a felony. Although not required for the KINSBS P-12 concentration, students seeking coaching endorsement will need to take PHED 4001 as well as appropriate PRAXIS exam(s) as designated by the Arkansas State Department of Education.

The following two concentrations are in the area of Exercise Science

**Exercise Science Core for Concentrations II and III** 40

- BIOL 1543/5441L Principles of Biology (hours counted in the University minimum core)
- BIOL 2443/2441L Human Anatomy (hours counted in the University minimum core)
- BIOL 2213/2211L Human Physiology
- CHEM 1103/1101L University Chemistry I
- CHEM 1123/1121L University Chemistry II
- PHYS 2013/2011L College Physics I
- PSYC 3023 Abnormal Psychology
- HESC 1213 Nutrition in Health
- CNED 3053 The Helping Relationship
- KINS 2733 Seminar in Exercise Science
- KINS 3533 Laboratory Techniques
- KINS 405V Independent Study (3 hrs.) or KINS 4903 Internship or HNEC 4003H Honors Education Thesis/Project if Honors student
- KINS 4323 Analytical Basis/Movement
- KINS 4833 Exercise Appl/Spec Pops

**Concentration II: Exercise Science – Pre-Professional Science** 15-16  
**Additional requirements**

- BIOL 2013/2021L General Microbiology/Lab
- PSYC 2013 Intro to Statistics for Psychology or STAT 2303 or SOCI 3303 or adviser-approved statistics course
- MATH 2043 Survey of Calculus (hours counted in the state minimum core) or MATH 2554 Calculus
- PHYS 2033/2031L College Physics II with lab
- CHEM 2613/2611L Organic Physiological Chemistry with lab or CHEM 3603/3601L Organic Chemistry I with lab

**Electives** - Select from below or others with adviser approval 12-16

- CHEM 3613/CHEM 3611L Organic Chemistry II with lab
- CHEM 3813 Intro to Biochemistry
- BIOL 2323/2321L General Genetics/Lab
- HLSC 2662 Terminology for the Health Professions
- ENGL 3053 Technical and Report Writing
- HESC 2203 Nutrition for Exercise and Sport
- PSYC 4183 Behavioral Neuroscience

**Concentration III: Applied Exercise Science**

**Exercise Science Core** (see above) 40

**Additional requirements** 9

- MATH 1203 College Algebra (hours counted in the state minimum core)
- MATH 1213 Plane Trigonometry
- HLSC 3633 First Responder-First Aid
- KINS 4773 Performance and Drugs

**Electives** - Select from below or others with adviser approval 18-21

- KINS 2393 Prevention and Care of Athletic Injuries
- HLSC 2662 Terminology for Health Professions
- HESC 2203 Nutrition for Exercise and Sport
- RECR 3873 Sport and Recreation Risk Management
- HLSC 3683 Health Care Consumerism
- HLSC 4603 Application of Health Behavior Theories in Health Education

**Kinesiology Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan in Kinesiology should see page 42 in the Academic Regulations chapter for university requirements of the program. Kinesiology has three concentrations: P-12, Exercise- Pre-Professional and Exercise Science-Applied Exercise Science. The eight semester plan for each is listed below.

**P-12 Concentration I**

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	†Social Science (except PSYC 2003)
4	BIOL 1543/1541L Principles of Biology w/Lab
3	HLSC 1103 Personal Health and Safety
3	PHED 1003 The P.E. Profession: An Overview
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3	MATH 1203 College Algebra (or higher)
3	COMM 1313 Fundamentals of Communication
3	†U.S. History or American Nat. Government
3	PHED 2013 Tch Progress and Assess./Basic Skills
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	KINS 2223 Motor Development
3	PSYC 2003 General Psychology
3	Literature Elective
3	FA/Humanities
4	BIOL 2443/2241L Human Anatomy with lab or adviser-approved A&P 1 (which meets State Minimum Core)
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 2	
2	PHED 3032 Teaching Rhythms
3	†Social Science (except PSYC 2003)
3	PHED 2023 Teaching Progression and Assessment/Adv. Skills
3	CIED 3033 Classroom Learning Theory
2	PHED 3002 Outdoor Recreation and Experiential Activities
3	†Fine Arts or Humanities
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 3	
0-3	ENGL 2003 Advanced Composition (or exemption)
3	PHED 3373 Elementary Physical Education
3	PHED 3903 Physical Education for Special Populations
3	CNED 4003 Classroom Human Relationship Skills or CNED 3053 The Helping Relationship

3	KINS 3163 Exercise Physiology: Theory and Application or KINS 3153 Exercise Physiology
0-3	†HLSC Elective
<b>15-18</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
4	PHED 3074 Secondary Physical Education (must take with PHED 3702)
2	PHED 3702 Measurement in Kinesiology (must take with PHED 3074)
3	PHED 3043 Teaching Fitness
2	PHED 3022 Teaching Stunts and Tumbling
3	KINS 3353 Mechanics of Human Movement
1	HLSC Elective
<b>15</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
1	PHED 3001 Practicum
3	PHED 3203 Prin. of Coaching
3	KINS 4413 Org/Man/Mrkt Skills for the KINS Professional
3	HLSC 3633 First Responder ó First Aid
3	KINS 3373 Philosophical/Sociocultural Impact of Kinesiology
2	HLSC Elective
<b>15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3	PHED 4023 Class Management
9	PHED 407V Physical Education Teaching Internship
3	PHED 4263 Professional Issues in Physical Ed.
1	PHED 4731 Senior Seminar
<b>16</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

† Core areas must be completed as outlined in University Core – See page 40.

Note: All students seeking licensure in the state of Arkansas are subject to a criminal background check. Forms for this procedure may be obtained at Peabody Hall, Room 117, at the State Department, or any police station, including the campus police. These background checks take up to six months to process; therefore, students are advised to complete and submit the forms to the proper authorities six months in advance of actually applying for a license. Arkansas will not certify anyone who has been convicted of a felony.

Although not required for the KINS B.S. P-12 concentration, students seeking coaching endorsement will need to take PHED 4001 as well as appropriate PRAXIS exam(s) as designated by the Arkansas State Department of Education.

### Pre-Professional Science Concentration II

<b>Fall Semester Year 1</b>	
3	ENGL 1013 Composition I
4	CHEM 1103/1101L University Chemistry I with lab
2	HLSC 1002 Wellness Concepts
1	PEAC 1621 Fitness Concepts
3	†Fine Arts or Humanities
4	BIOL 1543/1541L Principles of Biology with lab
<b>17</b>	<b>Semester Hours</b>
<b>Spring Semester Year 1</b>	
3	ENGL 1023 Composition II
3-4	MATH 2043 Survey of Calculus; Math 2554 Calculus I
3	†Fine Arts or Humanities
4	CHEM 1123/1121L University Chemistry II with lab
3	†Social Science (except PSYC 2003)
<b>16-17</b>	<b>Semester Hours</b>
<b>Fall Semester Year 2</b>	
3	COMM 1313 Fundamentals of Communications

3	KINS 2733 Seminar in Exercise Science
3	KINS 2223 Motor Development
3-4	Approved electives or ***3603/3601L Organic Chemistry I
4	BIOL 2443/2241L Human Anatomy with lab
<b>16-17</b>	<b>Semester Hours</b>
<b>Spring Semester Year 2</b>	
0-3	ENGL 2003 Advanced Composition (or Exempt)
3	PSYC 2003 General Psychology
3	†U.S. History or American National Government
3-4	Approved Electives or ***CHEM 2613/2611L Organic Physiological Chemistry
4	BIOL 2213/2211L Human Physiology with lab
<b>13-17</b>	<b>Semester Hours</b>
<b>Fall Semester Year 3</b>	
4	PHYS 2013/2011L College Physics I with lab
3	KINS 3153 Exercise Physiology
3	CNED 3053 The Helping Relationship
4	BIOL 2013/2011L General Microbiology with lab
<b>14</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
4	PHYS 2033/2031L College Physics II with lab
3	KINS 3533 Laboratory Techniques
3	HESC 1213 Nutrition and Health
3	KINS 3353 Mechanics of Human Movement
3	Approved Elective
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	PSYC 2013 Statistics
3	KINS 4833 Exercise Application/Special Populations
3	†Social Science (recommend HIST 1003)
3-6	Approved Elective
3	Literature Elective (recommend WLIT I)
<b>15-18</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3	KINS 4323 Analytical Basis/Movement
3	KINS 405V Independent Study or 4903 Internship or **HNED 4003H Honors Education Thesis/Project
3	PSYC Abnormal Psychology
3-4	Approved Elective
<b>12-13</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

† Core areas must be completed as outlined in the University Core – See page 40.

\* BIOL 1543/1541L is a prerequisite for BIOL 2443/2441L

\*\* Only for students completing the College of Education and Health Professions Honors Program.

\*\*\* Preprofessional program requires either CHEM 2613/2611L or CHEM 3603/3601L. Must be taken fall or spring semester of second year.

### Applied Exercise Science Concentration III

<b>Fall Semester Year 1</b>	
3	ENGL 1013 Composition I
4	CHEM 1103/1101L University Chemistry I w/Lab
3	MATH 1203 College Algebra
3	†Fine Arts or Humanities
4	BIOL 1543/1541L Principles of Biology w/Lab
<b>17</b>	<b>Semester Hours</b>
<b>Spring Semester Year 1</b>	
3	ENGL 1023 Composition II
3	MATH 1213 Plane Trigonometry
3	†Fine Arts or Humanities
4	CHEM 1123/1121L University Chemistry II w/Lab

3	†Social Science (except PSYC 2003)
<b>16</b>	<b>Semester Hours</b>
<b>Fall Semester Year 2</b>	
3	COMM 1313 Fundamentals of Communications
3	KINS 2733 Seminar in Exercise Science
3	KINS 2223 Motor Development
3	HLSC 1103 Personal Health and Safety
4	BIOL 2443/2241L Human Anatomy w/Lab
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 2</b>	
0-3	ENGL 2003 Advanced Composition (or Exempt)
3	PSYC 2003 General Psychology
3	†U.S. History or American National Government
3-4	Approved Elective
4	BIOL 2213/2211L Human Physiology w/Lab
<b>13-17</b>	<b>Semester Hours</b>
<b>Fall Semester Year 3</b>	
4	PHYS 2013/2011L College Physics I w/Lab
3	KINS 3153 Exercise Physiology
3	CNED 3053 The Helping Relationship
1	PEAC 1621 Fitness Concepts
3-4	Approved Elective
<b>14-15</b>	<b>Semester Hours</b>
<b>Spring Semester Year 3</b>	
3	KINS 3533 Laboratory Techniques
3	HESC 1213 Nutrition and Health
3	KINS 3353 Mechanics of Human Mvmt
3	Literature Elective (recommend WLIT I)
3	Approved Elective
<b>15</b>	<b>Semester Hours</b>
<b>Fall Semester Year 4</b>	
3	KINS 4903 Internship or KINS 405V Independent Study or **HNED 4003H Honors Education Thesis/Project
3	KINS 4833 Exercise Application/Special Populations
3	PSYC Abnormal Psychology
3	†Social Science
4	Approved Elective
<b>16</b>	<b>Semester Hours</b>
<b>Spring Semester Year 4</b>	
3	KINS 4323 Analytical Basis/Movement
3	KINS 4773 Performance and Drugs
3	HLSC 3633 First Responder-First Aid
0-6	Approved Electives
<b>6-12</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

† Core areas must be completed as outlined in the University Core – See page 40.  
 \* BIOL 1543/1541L is a prerequisite for BIOL 2443/2441L.  
 \*\* Only for students completing the College of Education and Health Professions Honors Program.

SEE PAGE 362 FOR KINESIOLOGY (KINS) COURSES

**RECREATION (RECR)**

- Professors Hunt, Moiseichik
- Associate Professor Langsner
- Assistant Professors Benton, Dittmore

The program of recreation is designed to prepare candidates for a variety of career opportunities in the field of recreation and parks. Career opportunities may include park and recreation directors for a city, sports management, fitness center managers, state and national park managers, camp administrators,

or work in YMCAs, Boys and Girls Clubs, or other youth-serving agencies. Graduates of this program should be well prepared to enter the recreational workforce at an entry level position or pursue graduate studies in such areas as recreation management, sport management, or other allied health professional schools.

The candidate for the Bachelor of Science in Education degree with a major in recreation must select professional electives in an area of interest with help from an academic adviser from the recreation faculty. Each set of professional electives is developed individually to meet specific career goals. Professional electives are 18-21 hours, generally in academic areas other than the recreation program. Examples of professional electives include, but are not limited to, public recreation, children and families, fitness club management, commercial recreation, aquatic management, therapeutic recreation, camp administration, outdoor leadership, community sports, youth at risk, and outdoor recreation.

All students must complete the University Core requirements as listed on page 40. In addition, all students must take the required general studies for the recreation core requirements listed below. Recreation majors must obtain a “C” or better in all courses beginning with the alpha code RECR. To enroll in RECR 440V, students must have a 2.50 GPA or better in RECR core and professional elective courses. Many courses in the recreation curriculum are taught in sequential order. Please check catalog course descriptions for prerequisites.

There are several experiential requirements within the recreation core. Students are required to do three practicum experiences (RECR 201V) in three different agencies. Each experience totals 45 hours. A more intense experience of an internship (RECR 440V) requires a minimum of 400 hours or work full time for 12-15 weeks in an agency with a qualified park and recreation professional. Students in the recreation program must obtain one instructor-level certification and a second certification in another area of expertise, three certifications which must be appropriate to recreation and be pre-approved by the recreation program. For additional information regarding these certifications see a recreation faculty adviser. Certifications must be valid at the time of graduation and be completed before a grade will be assigned in RECR 4013 Contemporary Issues in Leisure. Examples of these certifications include, but are not limited to, water safety instructor, aerobics instructor, American Red Cross canoeing instructor, first-aid instructor, and hunter safety instructor. A minimum of 124 hours are required for graduation in the major of recreation.

An undergraduate minor in recreation is also available to students enrolled in other colleges. Students with interests related to the recreation profession such as business, biology, human environmental science, or horticulture may elect the 15-hour minor. This minor could enhance future career opportunities.

<b>Curriculum for a Major in Recreation</b>	<b>Hours</b>
<b>University Minimum Core (State Minimum Core)</b>	<b>35</b>
<b>Required University Core for Major in Recreation</b>	
PLSC 2003 American National Government	
PSYC 2003 General Psychology	
SOCI 2013 General Sociology	
<b>Required General Studies for the Recreation Major</b>	<b>9</b>
3-hour Literature/History/Western Civilization elective	
COMM 1313 Fundamentals of Communication	
HLSC 1002 Wellness Concepts	
PEAC 1621 Fitness Concepts	
<b>Recreation Core</b>	<b>51</b>
RECR 1003 Professional Foundations of Leisure	
RECR 1023 Recreation and Natural Resources	

- RECR 201V Recreation Practicum (three 1-credit experiences)
- RECR 2063 Commercial Recreation and Tourism Enterprise
- RECR 2093 Inclusive and Special Recreation
- RECR 2813 Leadership Techniques in Recreation
- RECR 3833 Program Planning in Recreation
- RECR 3843 Planning, Design and Maintenance for Recreation
- RECR 3853 Leisure Behavior
- RECR 3873 Sport and Recreation Risk Management
- RECR 4003 Innovative Practices in Recreation
- RECR 4013 Contemporary Issues in Leisure
- RECR 4083 Research and Evaluation in Recreation
- RECR 440V Internship (9 hours)
- HLSC 3633 First Responder-First Aid

**Directed Study Professional Electives** 18-21  
(Selected with help from a recreation faculty adviser.)

**Adviser approved electives** 8-11  
**Total Hours for Recreation degree** 124

Note: The minimum number of hours required to receive a baccalaureate degree at the University of Arkansas is 124 semester hours.

The Recreation major is exempt from Act 1014, which requires eight-semester degree plans for most majors, because students are recommended to register for RECR 440V (Internship) after the completion of their course work. This is necessary because the recreation agencies have their busiest season in the summer. For a recommended nine-semester plan, however, please refer to the College of Education and Health Profession's Web site at <http://coehp.uark.edu/>.

**Curriculum Requirements for a Minor in Recreation**

- 15 hours to include:
- RECR 1003 Professional Foundations of Leisure
- RECR 2813 Leadership Techniques in Recreation
- RECR 3833 Program Planning in Recreation
- RECR 3873 Sport and Recreation Risk Management
- RECR elective course selected to complement major (see adviser)

SEE PAGE 384 FOR RECREATION (RECR) COURSES  
SEE PAGE 378 FOR PHYSICAL EDUCATION ACTIVITIES (PEAC) COURSES

**REHABILITATION, HUMAN RESOURCES, AND COMMUNICATION DISORDERS (RHRC)**

Michael T. Miller  
Department Head  
100 Graduate Education Building  
479-575-3582  
E-mail: [mtmille@uark.edu](mailto:mtmille@uark.edu)

The Department of Rehabilitation, Human Resources, and Communication Disorders offers the B.S.E. in Human Resource Development and the B.S.E. in communication disorders. The M.S. with an emphasis in speech pathology, M.S. in rehabilitation, and Ph.D. in rehabilitation are also offered.

**COMMUNICATION DISORDERS (CDIS)**

- 201 Speech and Hearing Clinic  
479-575-4509
- Professor Shadden
- Associate Professors Toner, Hagstrom
- Assistant Professor Baker
- Visiting Assistant Professor Agan
- Research Associate Aslin
- Instructor McGehee

An undergraduate major in communication disorders leads to the B.S.E. degree and prepares students for graduate studies (master's level) in speech-language pathology and audiology. The minimum requirements for all students in the college are listed under general studies on page 238.

**Admission to the B.S.E. Major Degree Program in Communication Disorders**

All students declaring an undergraduate major in communication disorders are accepted as tentative candidates to the undergraduate program. However, formal admission to the program is limited. Students must apply for admission to the undergraduate B.S.E. degree program in communication disorders prior to taking junior- and senior-level classes in the major. Requirements for admission include the following:

- Completion of the admission application form.
- Junior status at the time that 3000-level courses will be taken.
- An overall minimum GPA of 3.0 over the first four semesters (50-60 hours) of college course work.
- Satisfactory completion of an admission interview with designated members of the faculty.

Students who do not meet admission criteria for the B.S.E. degree program in communication disorders in any given year may reapply in subsequent years.

**Requirements for the program in Communication Disorders** **Hours**  
**University Core (State Minimum Core)** 35

Of which Communications Disorders requires the following specific courses:

- BIOL 1543/1541L
- PSYC 2003
- And choose one of the following:
- PHYS 1023/1021L
- PHYS 2013/2011L
- CHEM 1074/1071L

**Additional General Studies course requirements for Communication Disorders** 11

- ENGL 2003 Advanced Comp must be taken, no exemption of this course is allowed except for Honors students
- WLIT 1113
- COMM 1313 Fundamentals of Communication
- HLSC 2662 Terminology for the Health Professions

**Communication Disorders Major Requirements** 41

- CDIS 2253 Introduction to Communicative Disorders
- CDIS 3103 Introduction to Audiology
- CDIS 3124 Normal Phonological and Articulatory Processes
- CDIS 3203 Articulation Disorders
- CDIS 3213 Anatomy and Physiology of Speech and Hearing Mechanisms
- CDIS 3224 Language Development in Children
- CDIS 3233 Introduction to Clinical Practice

- CDIS 4133 Intro. to Aural Rehab
- CDIS 4213 Intro. to Speech and Hearing Science
- CDIS 4183 Clinical Assessment of Speech and Language Disorders
- CDIS 4223 Language Disorders in Children
- CDIS 4253 Neurological Bases of Communication
- CDIS 4273 Communication Behavior and Aging

**Electives** 36-37  
**Total for Communication Disorders** 124

**Communication Disorders Eight-Semester Degree Program**

Students wishing to follow the eight-semester degree plan in Communication Disorders should see page 42 in the Academic Regulations chapter for university requirements of the program. An eight-semester plan for the Honors Option is available at the College of Education and Health Profession's Web site.

ALL CDIS students are accepted as tentative candidates. Students must apply for formal admission to the undergraduate B.S.E. degree program in CDIS prior to taking junior- and senior-level classes in the major. Refer to page 237 for admission criteria.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	MATH 1203 College Algebra (or higher)
4	BIOL 1543/1541L Principles of Biology w/lab
3	†U.S. History/Government
3	Elective
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	ENGL 1023 Composition II
3	†Fine Arts or Humanities (except category C)
3	†Social Science (except PSYC 2003)
6	Electives
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 2	
3	WLIT 1113 World Literature
3	CDIS 2253 Intro to Communicative Disorders
3	PSYC 2003 General Psychology
4-5	PHYS 1023/1021L Physics & Human Affairs or CHEM 1074/1071L Fundamentals of Chemistry or PHYS 2013/2011L College Physics I
3	Elective
<b>16-17</b>	<b>Semester Hours</b>
Spring Semester Year 2	
2	HLSC 2662 Terminology for the Health Professions
3	†Social Science (except PSYC 2003)
3	COMM 1313 Fundamentals of Communications
3	Fine Arts/Humanities
4-5	Electives
<b>15-16</b>	<b>Semester hours</b>
Fall Semester Year 3	
4	CDIS 3124 Normal Phonology & Articulation
0	CDIS 3120L Phonetic Transcription Lab
3	CDIS 3213 Anatomy of Speech and Hearing Mechanism
4	CDIS 3224 Language Development in Children
0	CDIS 3220L Language Transcription Lab
5	Electives
<b>16</b>	<b>Semester hours</b>
Spring Semester Year 3	
3	CDIS 3203 Articulation Disorders
3	CDIS 3233 Introduction to Clinical Practice
3	CDIS 4223 Language Disorders in Children

3	ENGL 2003 Advanced Composition or ENGL 2013 Essay Writing
4	Elective
<b>16</b>	<b>Semester hours</b>
Fall Semester Year 4	
3	CDIS 3103 Intro. To Audiology
3	CDIS 4253 Neurological Bases of Communication
3	CDIS 4273 Communication Behavior and Aging
6	Electives (Recommend: CDIS 4001 Clinical Practicum: Undergraduate)
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 4	
3	CDIS 4133 Intro. to Aural Rehab.
3	CDIS 4213 Intro to Speech and Hearing Science
3	CDIS 4183 Assessment of Speech and Language Disorders
6	Electives (Recommend: CDIS 4001 Clinical Practicum: Undergraduate)
<b>15</b>	<b>Semester hours</b>
<b>124</b>	<b>Total hours</b>

† Must meet University Core.

SEE PAGE 324 FOR COMMUNICATION DISORDERS (CDIS) COURSES

**HUMAN RESOURCE DEVELOPMENT (HRDV)**

Phil Gerke  
 Adviser  
 214 Graduate Education Building  
 479-575-4690

Dale E. Thompson  
 Adviser  
 111 Graduate Education Building  
 479-575-6640

HRDV curriculum focuses on developing the people skills and effective development strategies useful for management, supervision, employee/technical training, consultation, or instructional design. The plan of study accelerates degree-completion for working adults by offering credit for knowledge gained by experience. Web-based and weekend courses by distance learning at selected campuses around Arkansas are offered on a five-semester degree-completion plan in cooperation with the UA Division of Continuing Education. Undergraduates also obtain a solid academic base to pursue a graduate degree. This is not a teacher preparation concentration.

This degree is open only to adult learners who have earned at least 40 hours of General Education requirements, who are employed full time, and have at least five years of work experience. Departmental approval is mandated before taking any HRDV courses. These admission requirements exclude this concentration from participating in the Eight Semester Degree Completion Program. However a recommended five-semester degree-completion plan and additional information regarding this concentration can be found on the College Web site.

<b>Human Resource Development (HRDV) Concentration</b>	<b>Hours</b>
University Core Requirements	35-38
3 hours must be PSYC 2003 General Psychology	
Advanced composition requirement: no credit if exempted, three additional credits of electives required	

HRDV General Education Requirements	17-20
3 hours Oral Communication: Fundamentals, public speaking, or similar course	
3 hours Health/Wellness/Fitness/Safety	
3 hours Computers/Media: application software courses, or exempted with documented proficiency	
8 hours of electives or as needed to total 55 hours/credits of General Education and University Core	
HRDV Technical Requirements	33
Required: HRDV 3403 Employment Law in HRD plus any combination of the following	
Appropriate occupation-related credits from UA coursework, transfers from accredited institutions of higher learning (within limits), or College Level Examination Program (CLEP) exams	
Credit by advanced standing examination for job knowledge as measured by selected National Occupational Competency Testing Institute (NOCTI) assessments, transcribed as CATE 200V-204V Work Experience credit	
Additional HRDV 4603-4693 HRD Practicum coursework, up to 12 additional hours, beyond the HRDV Practicum requirement described below	
HRDV 3503 Workforce Behavior	
HRDV 450V Experiential Learning. Credit for certain occupational training or professional certifications based on either the Council for the Advancement of Experiential Learning (CAEL) format or American Council on Education (ACE) guidelines. Tuition is charged for these credit hours.	
Prerequisite: HRDV 3503 Workforce Behavior	
HRDV Professional Courses: offered in a set rotation of Web-based or weekend classes delivered to se-lected host sites by distance learning starting each fall: HRDV 3113, HRDV 3123, HRDV 3133, HRDV 3213, HRDV 4113, HRDV 4133, HRDV 4213, HRDV 4233	24
HRDV Practicum Requirements	12
Students must complete four Practicums of their choice from among the following: HRDV 4603, HRDV 4613, HRDV 4623, HRDV 4633, HRDV 4643, HRDV 4653, HRDV 4663, HRDV 4673, HRDV 4683, or HRDV 4693	
<b>Total</b>	<b>124</b>

### Human Resource Development Concentration Five-Semester Degree Completion Program

The Human Resource Development Concentration is exempt from ACT 1014 requirements, which apply to eight-semester degree-completion plans. This five-semester plan is an example only; individual student plans may vary significantly. Courses in bold must be taken that semester. All University Core and Human Resource Development general education graduation requirements in the Academic Regulations section of the Catalog of Studies must be met in order to receive a diploma.

Credit from Human Resource Development academic adviser-approved National Occupational Competency Testing Institute (NOCTI) assessments accelerate completion of technical requirements. If fewer than needed are earned from NOCTI, completing additional Practicums and/or other appropriate coursework will require heavier course loads per semester and/or longer than five semesters to graduate.

Students not passing the optional Advanced Composition Exemption Exam are advised to start ENGL 2013 Essay Writing by Independent Study in April after HRDV 3213 ends. Passing the exemption exam adds 3 credits of HRDV General Education to Electives to complete graduation requirements. Local students preferring on-campus classes are advised to take ENGL 2003.

Earned Prior to Fall Semester Year 1	
40	University Core and HRDV General Education credits
13	Appropriate HRDV Technical credits
<b>53</b>	<b>Semester Hours</b>
Fall Semester Year 1	
3	<b>HRDV 3213</b> Intro to HRD (Fridays, CIV classroom-based)
3	<b>HRDV 4113</b> Theories/Principles of Adult Education (Web-based)
6	HRDV General Education courses as required
	Take all, if any, NOCTI tests needed and approved by HRDV adviser
	Take Advanced Composition Exemption exam if desired
<b>12</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	<b>HRDV 3133</b> Communication in HRD (Fridays, CIV classroom-based)
3	<b>HRDV 3113</b> Skills and Strategies (Web-based)
6	HRDV General Education courses as required
14	Credit by examination(s) for job knowledge in semester 1 awarded
	Begin ENGL 2013 Essay Writing by Independent Study (unless exemption approved)
<b>26</b>	<b>Semester Hours</b>
Summer Semester Year 1	
3	ENGL 2013 Essay Writing by correspondence completed (unless exemption approved)
3	HRDV 3403 Employment Law* or HRDV Practicum 1**
3	HRDV 3503 Workforce Behavior***
<b>9</b>	<b>Semester Hours</b>
Fall Semester Year 2	
(This example shows a distant transfer student in the "A" rotation; the "B" rotation swaps the HRDV courses in bold in Fall Semester Year 2 with those in Spring Semester Year 2.)	
3	<b>HRDV 4233</b> Leadership in HRD (Web-based)
3	<b>HRDV 4213</b> Professional Development (Saturdays, CIV classroom-based)
3	HRDV Practicum 1** or HRDV 3403 Employment Law*
3	HRDV Practicum 2
<b>12</b>	<b>Semester Hours</b>
Spring Semester Year 2	
3	<b>HRDV 3123</b> Needs Assessment and Evaluation (Web-based)
3	<b>HRDV 4133</b> Group Dynamics (Saturdays, CIV classroom-based)
3	HRDV Practicum #3
3	HRDV Practicum #4
<b>12</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

\* HRDV 3403 Employment Law, a Technical requirement for graduation, can be taken any semester after completing 43+ hours of HRDV General Education credit and all approved NOCTI tests.

\*\* HRDV students must complete four Practicum courses of their choice, numbered HRDV 4603, HRDV 4613, HRDV 4623, HRDV 4633, HRDV 4643, HRDV 4653, HRDV 4663, HRDV 4673, HRDV 4683, or HRDV 4693, in any semester after completing 43+ hours of HRDV General Education, all approved NOCTI tests if any, and the prerequisite HRDV Professional course

\*\*\* HRDV 3503 Workforce Behavior, available in summer only, can be taken as an option for HRDV Technical credit after completing 43+ hours of General Education and all approved NOCTI tests, if any. HRDV 3503 is a prerequisite for HRDV 450V Experiential Learning. Any HRDV 450V credit would be applied in subsequent semesters in consultation with an HRD academic adviser.



# College of Engineering

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## Office of the Dean of the College

4183 Bell Engineering Center, 479-575-7455

### Dean

Ashok Saxena

### Associate Dean

Terry W. Martin

### Assistant Dean for Finance

Colleen Briney

### Assistant Dean for Research

Shannon Davis

### Assistant Dean for Student Affairs

Thomas Carter, III

### Academic Programs Office

3189 Bell Engineering, 479-575-3052

### World Wide Web

<http://www.engr.uark.edu/>

**E-mail:** [engrinfo@uark.edu](mailto:engrinfo@uark.edu)

- Electric Power Systems and Advanced Power Electronics
- Electronics Manufacturing
- Environmental and Ecosystems Analysis
- Mixed Signal Electric Systems
- Nanotechnologies
- Transportation, Logistics and Infrastructure
- Homeland Security

Extensive information about the College of Engineering is available from the Web site <http://www.engr.uark.edu>. The site includes overviews of each programmatic activity and area of emphasis as well as information about faculty, facilities, programs of study, advisory groups, centers, research capabilities, special programs, distance education, professional development, and opportunities for partnerships with the college.

## Statement of Purpose

Recognizing that the University of Arkansas, Fayetteville, is a land-grant institution with consequent responsibilities in teaching, research, and service, and realizing that these are mutually dependent and necessary responsibilities, the College of Engineering adopts and seeks to fulfill the following statements of purpose.

**Undergraduate Education:** To offer a high-quality and fully accredited course of instruction involving classroom, laboratory, and extracurricular activities that will result in professionals qualified to begin careers in the field of engineering and prepared to assume responsible places of leadership in society.

**Graduate Education:** To offer state-of-the-art coursework and research experiences that result in all graduates being capable of independent analysis and design, and all Ph.D. graduates capable of extending the state-of-the-art in their areas of expertise.

**Continuing Education:** To provide local, regional, national, and international seminars, symposia, short courses, and credit courses to engineers and others in the technical community to help them further their formal education and keep abreast of new developments in technology.

**Technology Development:** To assist actively and vigorously in the growth and development of the state of Arkansas and the nation by performing research and development of state-of-the-art technology, by updating the existing technology within industrial circles, by providing educational support services, and by attracting and creating new industry.

**External Relations:** To communicate effectively with the college's various constituencies to establish and maintain long-term relationships, which lead to increased support for quality programs in teaching, research, and service.

**Internal Relations:** To actively involve engineering faculty in University, college, and department governance and related functions.

## MISSION AND OBJECTIVES

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Engineering is one of the most rewarding of the major professions. Engineers have been primarily responsible for the present high standard of living and for the security of the nation in times of peace and war. Engineering graduates must have a background of sound mathematics, scientific and economic principles and must be acquainted with industrial practices in their chosen field before they can assume responsibility in the profession. Many engineering graduates become managers and leaders in the public and private sectors because of the problem-solving skills that were developed as part of an engineering education.

The College of Engineering adds personal, social and economic value to the region, the state, the nation, and to the world through engineering education and cutting-edge research in emerging technologies. Value is added through four separate but highly integrated activities:

- Undergraduate Education
- Graduate Education and Research
- Continuing Education and Technology Transfer
- Technology-based Business Incubation and Job Creation

Programmatic activities focus largely on the following areas of emphasis:

- Biological, Chemical and Food Processing
- Biomedical Engineering
- Database

## COLLEGE OF ENGINEERING STRATEGIC PLAN

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### “Engineering the Future – Today”

For more than 100 years, the College of Engineering has successfully fulfilled its primary mission: to provide an excellent engineering education to undergraduate and graduate students at the University of Arkansas.

The College of Engineering faculty, staff, alumni and students decided to accept the challenge to become one of the best. Specifically, our collective goal is:

*To become and be recognized as one of the top tier graduate and undergraduate engineering programs in the U.S.*

The College’s strategic plan encompasses five main goals. By successfully accomplishing these objectives, the College of Engineering will contribute to the University of Arkansas becoming a nationally competitive, student-centered research institution serving Arkansas and the world, effectively fulfilling its purpose.

### Five Strategic Goals

- 1. Implementing the Student-Centered Educational Experience –** Provide a student-centered educational experience that attracts diverse, high-quality students, enables them to realize their potential, inspires them to pursue excellence at all degree levels and grooms them to become leaders in their profession.
- 2. Implementing an Enabling Research Environment –** Create a research environment that enables, enhances and recognizes scholarship, while stimulating entrepreneurship and economic development within our state, nation and world.
- 3. Implementing the Vision as it Relates to Faculty –** Recruit, mentor and retain high-quality and diverse faculty members who value and promote world-class scholarship.
- 4. Implementing the Vision as it Relates to Staff –** Attract, develop and retain well-qualified, diverse and skilled staff members who are equipped to support the growth and potential of the College of Engineering.
- 5. Implementing the Service and Economic Development Outreach Plan –** Enhance the impact of the College of Engineering both within and outside the university through service and outreach.

## FACILITIES AND RESOURCES

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### Instructional, Computer, and Laboratory Facilities

Undergraduate instruction in engineering takes place in Bell Engineering Center, Engineering Hall, J.B. Hunt Center for Academic Excellence, and the Mechanical Engineering building. These facilities contain state-of-the-art classrooms and instructional equipment. Undergraduate laboratories are located both on the main campus as well as at the Engineering Research Center. Laboratories offer students hands-on experience relating to the subject matter addressed in the classroom.

The College of Engineering utilizes a wide variety of computing equipment to assist in engineering education. Students have easy access to computers through general computer laboratories or computer facilities located in specialized laboratories within the college. The computers are networked so that all the computing power of the university, including the mainframe computers, can be accessed from the PCs or workstations provided for engineering students. Owning a personal computer is not required; however, it is beneficial.

### Laboratory Fee

In order to maintain the college’s state-of-the-art instructional and com-

puter laboratories, each student enrolled in an engineering course is assessed a laboratory fee for that term. This fee is used only to purchase and maintain equipment and staff the engineering laboratories to assist students.

### Library

The books and references used by engineering students and faculty are housed principally in the University of Arkansas Mullins Library. This collection is the most useful and comprehensive engineering library in the state. Many publications pertinent to the engineering profession are being added continuously. Mullins Library is the depository for water resources papers, geological survey materials, and NASA publications, as well as other governmental and industrial series.

### Engineering Research Center

The 178,000-square-foot Engineering Research Center is located approximately two miles south of the main campus. The center provides the facilities and support services for a wide variety of research activities. It houses the Engineering Experiment Station through which the research of individual departments in the college is administered. Centers and laboratories located at the Engineering Research Center include GENESIS, the High Density Electronics Center, the Center for Training Transportation Professionals, and the Chemical Hazards Research Center.

### Distance Learning

A Master of Science in Engineering (M.S.E.) degree is available for students who wish to take a broad range of engineering courses. See the Graduate School Catalog for details.

Professional development and continuing education credits can be earned through the College of Engineering’s Center for Distance Learning. These courses provide ongoing training on technical and engineering topics for professional engineers, land surveyors, and others in the technical and engineering professions.

The Master of Science in Operations Management (MSOM) degree program at the University of Arkansas offers students the philosophy, concepts, and techniques needed to manage available resources to achieve maximum efficiency and effectiveness in meeting operational goals. It provides the tools needed for successful management in industrial and/or military settings. Geared toward the working student, classes meet in the evenings in five 8-week terms per year. The program is offered at military installations at Little Rock Air Force Base (Jacksonville, Ark.), Naval Support Activity Mid-South (Millington, Tenn.), Hurlburt Field, Fla., and at in-state sites at Fayetteville, Camden, and Blytheville. Students in remote locations may also earn the MSOM degree by taking video courses. This is a non-engineering degree that is open to students from all undergraduate backgrounds. See the Graduate School catalog for details.

## DEGREES OFFERED

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The College of Engineering offers programs leading to the following eight undergraduate degrees:

- Bachelor of Science in Biological Engineering (B.S.B.E.)
- Bachelor of Science in Chemical Engineering (B.S.Ch.E.)
- Bachelor of Science in Civil Engineering (B.S.C.E.)
- Bachelor of Science in Computer Engineering (B.S.Cmp.E.)
- Bachelor of Science in Electrical Engineering (B.S.E.E.)
- Bachelor of Science in Industrial Engineering (B.S.I.E.)
- Bachelor of Science in Mechanical Engineering (B.S.M.E.)
- Bachelor of Science in Computer Science (B.S.)

## OTHER PROGRAMS

### Off-Campus Programs

The College of Engineering at the University of Arkansas, Fayetteville (UAF) is offering the Bachelor of Science degrees in Electrical Engineering and Mechanical Engineering at the University of Arkansas at Fort Smith (UAFS). Upper-division courses are taught in person or through distance-learning technology by UAF faculty, and lower-division courses are taught by UAFS faculty. The degree is awarded by UAF, but all classes are offered at the UAFS campus.

### Cooperative Education

George Winter

Career Development Center, College of Engineering, Bell 3158

(479) 575-6201, Fax: (479) 575-7744, gwinter@uark.edu

Over the years thousands of engineering students have participated in the Cooperative Education (Co-op) program at the University of Arkansas program. Students have gained experience related to their major locally, within the state, across the nation, and internationally. The experience gained by Co-op students allows them to step into their first full-time positions ready to contribute in ways that other students cannot. The material shown below will give you the information you need to make the Co-op decision.

Cooperative Education (Co-op) is an academic program that allows students to gain practical work experience prior to graduation. Students work either full or part-time in paid, degree-related jobs.

#### Forms of Cooperative Education: Alternating and Parallel

In an alternating plan, students will alternate between semesters of on-campus study with semesters off-campus at your Co-op work site. In a parallel Co-op, students work part-time for a local company (15 to 25 hours each week) and attend school at least half-time. In either plan the student is considered a "full-time" student.

By participating in Cooperative Education, students have the chance to:

- Gain hands-on experience in a real world setting
- Confirm the choice of their major
- Make valuable industry contacts
- Enhance their communication skills
- Make money while also taking classes
- Help ensure a job at graduation

#### Requirements and Conditions

Undergraduate students must have completed 30 hours toward an engineering degree and must have a minimum 2.25 cumulative GPA. Students participating in a full-time Co-op must have 12 hours of course work remaining upon return to campus.

Graduate students must have completed 6 hours toward an engineering degree and must have a minimum 3.0 cumulative GPA. Students participating in a full-time Co-op must have 3 hours of course work remaining (not thesis, dissertation, or research). They must also have approval of the departmental graduate adviser prior to interviewing for Co-op positions.

Transfer students must have completed one semester of full-time study in the College of Engineering and must meet all other Co-op requirements.

Students in F-1 non-immigration status must have completed nine months of study in the United States and must meet all other Co-op requirements. Full-time Co-op assignments consist of the following scenarios:

- One semester away from campus (Spring, Summer, or Fall).
- One summer and one semester away from campus (Spring & Summer OR Summer & Fall).
- Alternating Semesters between Spring, Summer, and Fall.

Students who are away from campus for 2 semesters in one year, are eligible

for only one semester away the following year with no more than three Co-op semesters in a 24-month period. (Exceptions to this must be approved in advance by their Departmental Co-op Representative.) Students who are going to be away from campus for the Fall and Spring semester in the same academic must receive prior approval from their Departmental Co-op Representative.

### Dual-Degree Transfer Programs

The College of Engineering recognizes that a graduate engineer, to be of full service to community, must be educated in the social sciences and humanities as well as in technical subjects. The practice of industry to elevate engineers to managerial and administrative positions elevates the desirability of a broad educational background. Likewise, most universities within Arkansas do not offer a degree in engineering. Accordingly, the College of Engineering of the University of Arkansas has entered into a cooperative program with several Arkansas "partner" universities to provide for dual-degree programs that lead to a Bachelor of Arts/Bachelor of Science degree from the partner university and an engineering degree from the University of Arkansas. Typically, a student spends two to three years at the partner university and then completes an engineering curriculum in two to three years at the University of Arkansas. The student is awarded the Bachelor of Arts/Bachelor of Science degree by the partner university. The student is awarded the Bachelor of Science in an engineering discipline by the University of Arkansas. More information is available at <http://www.engr.uark.edu/transfer.php>

## COLLEGE ADMISSION REQUIREMENTS

Freshmen admitted to the University of Arkansas, Fayetteville, are eligible to enroll in the College of Engineering. The freshman curriculum stresses a basic foundation in mathematics, physics, and chemistry, which will be required in later years. The sophomore, junior, and senior years are spent in a strong concentration on the student's chosen field, with emphasis on industrial applications of classroom and laboratory work. By the selection of electives, a student can concentrate in depth in a particular subject, have the flexibility to study several subjects, and minor in an area of interest. Provision is made for electives in the humanities and social sciences as a means of providing a well-rounded education.

### Computer Skills

Future students are strongly encouraged to take a one-year high school course in basic computer skills, which should include at a minimum: 1) basic use of a common operating system, 2) word processing, and 3) use of spreadsheets. All engineering departments either recommend or require that incoming students deficient in these skills take a specified remedial course. Taking high school courses in engineering drawing and computer programming also is beneficial and strongly encouraged.

### International Students

Before being admitted all computer engineering applicants must submit a Test of Spoken English (TSE) score of at least 5.0, or a 7.0 on the spoken section of the IELTS, and an ACT score of 25 (or SAT score of 1140(R)) or above, to be eligible for admission.

### Transfer of Credit

In addition to the University policies controlling the granting of credit for course work taken at other institutions, the following policies apply to students entering the College of Engineering.

1. All courses taken at another institution are subject to approval by the dean of the College of Engineering and the head of the degree-

granting department. Credit from all institutions must be approved on a course-by-course basis to ensure its acceptability in fulfilling requirements for a degree in engineering. In making this evaluation, the student may be required by the dean and/or department head to produce catalogs from the institution from which the student is transferring that contain descriptions of the courses for which credit is expected in an engineering discipline.

- Advanced (3000- and 4000-level at the University of Arkansas) engineering courses may not normally be transferred from institutions that do not have engineering programs accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET).
- Unless exceptions are granted at the time of admission to the University of Arkansas, no degree credit will be granted for any course taken at another institution in which the student's grade in that course was not the equivalent of at least 2.00 on a 4.00 grading system. See the Admission chapter in this catalog for more information or go to <http://www.uark.edu/registrar/TransferCredit/>.

## COLLEGE SCHOLARSHIPS

The College of Engineering awards numerous scholarships, most scholarships are based primarily on academic performance. However, scholarships may also be awarded on the basis of financial need and diversity. Scholarships are available from both the college and its individual departments. College scholarships are available to any engineering student, and departmental scholarships are meant for students enrolled in a particular discipline of engineering. College and departmental scholarships are not available for entering freshmen. Students must be admitted to the University of Arkansas and enrolled in the College of Engineering to qualify and receive either a college or departmental scholarship. The college has a one-step application process that allows a student to be considered for all college-level and departmental scholarships.

For more information concerning scholarship and diversity opportunities, contact the Engineering Student Affairs Office at 575-3051 or e-mail [engrdean@uark.edu](mailto:engrdean@uark.edu).

## STUDENT ORGANIZATIONS

The following are honor societies and professional societies to which engineering students at the University of Arkansas may aspire:

- Alpha Chi Sigma (a professional chemistry fraternity)
- Alpha Epsilon (Biological/Agricultural Engineering)
- Alpha Pi Mu (Industrial Engineering)
- Chi Epsilon (Civil Engineering)
- Eta Kappa Nu (Electrical Engineering)
- Omega Chi Epsilon (Chemical Engineering)
- Order of the Engineer (professional engineering society)
- Phi Eta Sigma (freshmen)
- Phi Kappa Phi (juniors and seniors)
- Phi Sigma Rho, (professional engineering sorority)
- Pi Mu Epsilon (Mathematics)
- Pi Tau Sigma (Mechanical Engineering)
- Tau Beta Pi (Engineering)
- Theta Tau, (A professional engineering fraternity, it maintains a chapter house on the campus and is active in university and college affairs.)

Several national engineering societies are listed below and maintain student branches in the College of Engineering, each under the auspices of a

professor in a related department.

- American Chemical Society
- American Institute of Aeronautics and Astronautics
- American Institute of Chemical Engineers
- American Nuclear Society
- Amateur Radio Club of the University of Arkansas
- American Society of Agricultural and Biological Engineers
- American Society of Civil Engineers
- American Society of Heating, Refrigeration, and Air-Conditioning
- American Society of Mechanical Engineers
- Association for Computing Machinery
- Engineers Without Borders
- Institute of Biological Engineers
- Institute of Electrical and Electronics Engineers
- Institute of Electrical and Electronics Engineers, Components, Packaging, and Manufacturing Technology
- Institute of Industrial Engineers
- Institute of Transportation Engineers
- International Microelectronics and Packaging Society
- Materials Research Society
- National Society of Black Engineers
- Society of Automotive Engineers Assoc. for Computing Machinery
- Society of Hispanic Professional Engineers
- Society of Manufacturing Engineers
- Society of Women in Engineering
- Transportation and Logistics Association

## COLLEGE ACADEMIC REGULATIONS

Students are expected to keep themselves informed concerning current regulations, policies, and program requirements in their fields of study and must meet all requirements of the degree programs in which they are enrolled. Courses that are modified or added to a curriculum and that are incorporated into the curriculum at a level beyond that at which a student is enrolled may become graduation requirements for that student. Courses that are incorporated into the curriculum at a level lower than the one at which the student is enrolled are not required for that student.

### Eligibility

Only students enrolled in the College of Engineering or enrolled in programs in which curricula require engineering courses will be allowed to take engineering courses. Exceptions to this requirement must be approved by the dean of engineering. This does not apply to graduate students.

### Code of Ethics

Students in the College of Engineering are obligated to comply with pertinent provisions of the Code of Ethics applicable to professional practice following graduation. The Code requires "honesty, impartiality, fairness, and equity," and "adherence to the highest principles of ethical conduct." Most particularly, it states that engineers shall:

1. Be objective and truthful in professional reports, statements, or testimony;
2. Not falsify or permit misrepresentation of their academic or professional qualifications;
3. Give credit for engineering work to those whom credit is due;
4. Not compete unfairly with other engineers by attempting to obtain employment or advancement by improper or questionable methods;
5. Avoid any act tending to promote their own interest at the expense of the dignity and integrity of the profession.

## HONORS PROGRAM

The College of Engineering has established an honors program to challenge superior students with a more in-depth academic program and research experience and to provide a structure for working more closely with faculty members and other students in a team environment. An honors program is highly recommended for individuals planning academic or research related careers that require considerable critical and original independent thinking. Admission requirements for the college's Honors Program are as follows: entering freshmen must have at least a 3.5 high school GPA and at least a 28 composite score on the ACT; entering transfer students must have at least a 3.5 GPA on their transfer work. Students not initially qualifying for the Engineering Honors Program are eligible if they earn a 3.5 cumulative GPA at the University of Arkansas.

Students must formally apply for admission to the Engineering Honors Program. Once accepted into the program, Honors students take a minimum of 12 hours of Honors courses (a minimum of 6 of these 12 hours must be in engineering), participate in undergraduate research and write an undergraduate thesis, and must fulfill any additional departmental requirements. To receive Latin distinction at graduation, a student must hold a cumulative GPA of 3.50 or better (for all course work, computed at graduation).

Deadlines related to the Honors Program are as follows:

1. A Thesis/Project Proposal is to be completed prior to a student earning 90 semester hours.
2. Honors College Graduation Certification is to be completed prior to one week before the last day of classes of the student's last semester.

## DEGREE REQUIREMENTS

The basic requirement for a Bachelor of Science degree in engineering is 124-132 semester hours of academic work, depending on the career field chosen. Students coming from high school with adequate preparation will be able to satisfy this requirement in eight semesters; however, some students require preparatory courses, and others choose to enroll in slightly lighter loads and graduate in nine or ten semesters. Students enrolled in ROTC require an additional 19 semester hours to meet all graduation requirements and graduate in ten semesters (five years).

Engineering is a rapidly changing profession, and the departmental curricula are updated continuously to keep pace with these changes. Students entering under this catalog will be required to comply with such curriculum changes to earn their degree. However, the total number of semester hours required for the degree may not be increased, and all work completed in accordance with this catalog prior to the curriculum change will be applied toward the student's degree requirements. Former students of the college must meet the curriculum requirements in effect at the time of their readmission.

### Graduation Requirements

In addition to the specific departmental requirements for degree plans, students should refer to the Academic Regulations chapter of this catalog for general university requirements, beginning on page 39. A portion of that information is listed here for convenience.

1. **Residency Requirement** – The full senior year must be completed in residence except that a senior who has already met the minimum residency requirement will be permitted to earn not more than 12 of the last 30 hours in extension or correspondence courses or in residence at another accredited institution granting the baccalaureate degree.

No more than six of these 12 hours may be correspondence courses. The minimum residence requirement is 36 weeks and 30 semester hours. Residency for the senior year is defined as a period during which the student must be enrolled in courses offered on the campus in Fayetteville. This is intended to provide adequate contact with the University and its faculty for each student who is awarded a degree. Colleges and departments have the authority to prescribe residence requirements that exceed those described here.

2. **Grade-Point Average** – A candidate for a degree from the College of Engineering must have earned a grade-point average of no less than 2.00 on all courses in the student's major area of study, all engineering courses, and all work completed at the university and presented for the degree. Grades on work taken at other colleges and presented for transfer credit must also meet this standard.
3. **Courses That Do Not Count Toward a Degree** – The following courses do not count toward degree credit: ANTH 0003, PHSC 0003, ENGL 0003, MATH 0003, CIED 0003, MATH 1203, MATH 1213, MATH 1285, and ENGL 2003.
4. **"D" Rule** – No student will be allowed to graduate if the student has "D" grades in more than 15 percent of all credit earned in this institution and presented to meet the requirements for a degree.
5. **68 Hour Rule** – Students who transfer into the University may present for degree credit no more than 68 hours of lower division course work (1000 and 2000 level).
6. **Advanced Composition** – Every undergraduate student is required to take and pass ENGL 2003 Advanced Composition unless exemption can be gained. ENGL 2003 will not count as part of the total number of hours required for a degree in the College of Engineering.
7. **University Core (State Minimum Core)** – The University of Arkansas has adopted a University Core of 35 semester-credit-hours of general education courses that are required of all baccalaureate degree candidates. This is in compliance with Arkansas Act 98 of 1989 and the subsequent action of the Arkansas State Board of Higher Education. Beginning in the fall semester of 1991, all state institutions of higher education in Arkansas have a 35-hour minimum core requirement with specified hours in each of six academic areas. The University and the College of Engineering have identified those courses that meet the minimum requirement, and they are listed in the chart below.

Students should consult the requirements for specific departments and programs when choosing courses for use in the UA University Core.

Every student in the College of Engineering is required to complete a minimum of 18 semester hours in the humanities and social sciences. Six semester hours must be at the 3000-level or above. A list of approved upper-level humanities/social science courses is available in departmental offices and the dean's office.

No more than nine semester hours from any single discipline may be presented for degree credit. To meet the University Core requirements, the total number of hours (both upper level and lower level) in the fine arts/humanities courses must be at least six, and the social science hours must total at least nine (in addition to the U.S. history or government requirement). The six hours of courses at the 3000 and 4000 level may be in the fine arts and humanities area, the social science area, or divided between the two areas. Since some of the humanities and social science courses are specified in some of the curricula, e.g., ECON 2143 in chemical and mechanical engineering, the student should consult the curriculum of the department in which he/she is enrolled prior to selecting upper-level electives.

**Specific University Core Requirements for Engineering Students**

	Hours
English	6
ENGL 1013 Composition I	
ENGL 1023 Technical Composition II (ENGL 1023 Composition II may be taken in lieu of Technical Composition II)	
Mathematics	4
MATH 2554 Calculus I	
Science	8
PHYS 2054 University Physics I	
PHYS 2074 University Physics II or	
CHEM 1123, 1121L University Chemistry II	
U.S. History or Government	3
HIST 2003 History of American People to 1877	
HIST 2013 History of American People 1877 to Present	
PLSC 2003 American National Government	
Fine Arts, Humanities and Social Sciences	
Fine Arts and Humanities	6
Social Sciences	9
Six hours of Fine Arts, Humanities and Social Sciences must be upper level courses (3000-4000 level). A list of approved courses is available in departmental offices.	

**Minors in Other Colleges and Schools**

Students in the College of Engineering may pursue an academic minor in other colleges. For example, a minor in business is popular among engineering students. For requirements regarding minors, check the catalog listing for the department offering the minor. Students must notify the College of Engineering dean's office of their intent to pursue a minor.

**Requirements to Graduate with Honors**

Students who have demonstrated exceptional academic performance in baccalaureate degree programs will be recognized at graduation by the honors designation of *cum laude*, *magna cum laude*, or *summa cum laude*. To earn this designation, the student must meet the following criteria:

1. Must have completed at least one-half of his or her degree work at the University of Arkansas;
2. Must have at least a 3.50 GPA on University of Arkansas course work, computed at graduation (students with grade-point averages lower than 3.50 do not receive honors designation at graduation);
3. Must successfully complete the Engineering Honors Program, which includes a minimum of 12 hours of honors courses (at least 6 of these hours in engineering), an undergraduate research experience and thesis, and any additional departmental requirements;
4. Research and thesis material shall be evaluated by each department;
5. For *cum laude*, the student must achieve a GPA of 3.50 or higher and have good or better performance on the undergraduate research and thesis;
6. For *magna cum laude*, the student must achieve a GPA of 3.75 or higher and have good or better performance on the undergraduate research and thesis;
7. For *summa cum laude*, the student must achieve a GPA of 3.90 or higher and have outstanding performance on the undergraduate research and thesis.

The criteria may be evaluated and changed periodically by the College of Engineering.

**Requirements to Graduate with Distinction**

Students who have not completed the Engineering Honors Program but have

demonstrated excellent academic performance in baccalaureate degree programs will be recognized at graduation by the designation of "with distinction," "with high distinction," or "with highest distinction." To earn these designations, the student must meet the following criteria on his or her University of Arkansas course work:

1. Must have completed at least one-half of his or her degree work at the University of Arkansas;
2. For "with distinction," the student must achieve a GPA of 3.60 or higher;
3. For "with high distinction," the student must achieve a GPA of 3.75 or higher;
4. For "with highest distinction," the student must achieve a GPA of 3.90 or higher.

The criteria may be evaluated and changed periodically by the College of Engineering.

**GRADUATE STUDIES**

The College of Engineering, in cooperation with the UA Graduate School, offers programs leading to the following graduate degrees:

- Master of Science in Biological Engineering (M.S.B.E.)
- Master of Science in Biomedical Engineering (M.S.B.M.E.)
- Master of Science in Chemical Engineering (M.S.Ch.E.)
- Master of Science in Civil Engineering (M.S.C.E.)
- Master of Science in Computer Engineering (M.S.Cmp.E.)
- Master of Science in Computer Science (M.S.)
- Master of Science in Electrical Engineering (M.S.E.E.)
- Master of Science in Engineering (M.S.E.)
- Master of Science in Environmental Engineering (M.S.En.E.)
- Master of Science in Industrial Engineering (M.S.I.E.)
- Master of Science in Mechanical Engineering (M.S.M.E.)
- Master of Science in Telecommunications Engineering (M.S.Tc.E.)
- Master of Science in Transportation Engineering (M.S.T.E.)
- Doctor of Philosophy in Computer Science (Ph.D.)
- Doctor of Philosophy in Engineering (Ph.D.)

In addition, the College of Engineering supports the following interdisciplinary graduate programs:

- Master of Science in Cellular and Molecular Biology (M.S.)
- Master of Science in Microelectronics-Photonics (M.S.)
- Master of Science in Space and Planetary Sciences (M.S.)
- Doctor of Philosophy in Cellular and Molecular Biology (Ph.D.)
- Doctor of Philosophy in Microelectronics-Photonics (Ph.D.)
- Doctor of Philosophy in Space and Planetary Sciences (Ph.D.)

Further information concerning these programs may be found in the Graduate School Catalog or in the office of the dean of the Graduate School.

**ACCREDITATIONS**

As the only comprehensive engineering program in Arkansas, the College of Engineering offers undergraduate, graduate, and doctoral degrees through seven academic departments. UA engineering programs have been continuously accredited by the Accreditation Board of Engineering and Technology (ABET) since 1936.

The College of Engineering offers the following programs accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone (410) 347-7700:

- Bachelor of Science in Biological Engineering (B.S.B.E.)
- Bachelor of Science in Chemical Engineering (B.S.Ch.E.)

- Bachelor of Science in Civil Engineering (B.S.C.E.)
- Bachelor of Science in Computer Engineering (B.S.Cmp.E.)
- Bachelor of Science in Electrical Engineering (B.S.E.E.)
- Bachelor of Science in Industrial Engineering (B.S.I.E.)
- Bachelor of Science in Mechanical Engineering (B.S.M.E.)
- Master of Science in Environmental Engineering (M.S.En.E)

The College Engineering offers the following program accredited by the Computing Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD, 21202-4012, telephone 410-347-7700.

- Bachelor of Science in Computer Science (B.S.)

## DEPARTMENTAL MAJORS

### BIOLOGICAL AND AGRICULTURAL ENGINEERING (BAEG)

Lalit Verma

Head of the Department

203 Engineering Hall

479-575-2351

- Professors Gardisser, Griffis, Li, Loewer, VanDevender, Verma
- Associate Professors Bajwa, Carrier, Costello, Haggard, Kim, Matlock, Osborn, Tacker
- Assistant Professors Jin, Kavdia, Liang, Sadaka, Saraswat, Ye, Zaharoff
- Adjunct Professors Ang, Clausen, Deaton, Ingels
- Adjunct Associate Professors Beitle, Chaubey, Shafirstein, Yang
- Adjunct Assistant Professors Hestekin, Howell, Wimberly

Biological Engineers improve people's lives today and help assure a sustainable quality of life for tomorrow. They create solutions to problems by coupling living systems (human, plant, animal, environmental, food, and microbial) with the tools of engineering and biotechnology. Biological engineers improve human health through biomedical engineering; ensure a safe, nutritious food supply and create critical, new medicines through biotechnology engineering; secure a healthy and safe environment through ecological engineering. A bachelor of science degree in biological engineering is also excellent preparation for medical school.

Biological Engineering is an ABET accredited program leading to the B.S. degree. M.S. and Ph.D. degrees are also offered. The curriculum is under the joint supervision of the dean of the College of Engineering and the dean of the Dale Bumpers College of Agricultural, Food and Life Sciences. The Bachelor of Science in Biological Engineering degree is conferred by the College of Engineering and is granted after the successful completion of 128 hours of approved course work.

The educational objectives of the Biological Engineering program are to produce graduates who 1) effectively apply engineering to biological systems and phenomena (plant, animal, human, microbes, and the environment) with demonstrated proficiency in basic professional and personal skills, and 2) are well prepared for diverse careers in biological engineering, life-long learning, and professional and ethical contributions to society through sustained accomplishments in biomedical engineering, ecological and biotechnology.

#### Areas of Concentration

The three areas of concentration in biological engineering are as follows:

**Biomedical Engineering** – nanomedicine, tissue engineering, organ regeneration and its clinical application, bioinstrumentation, biosensing/medical imaging, medical electronics, physiological modeling, biomechanics, and rehabilitation engineering. This area is excellent preparation for medical, veterinary or dental school as well as for graduate programs in biomedical engineering.

**Biotechnology Engineering** – biotechnology at the micro- and nano-scale, food processing, food safety and security, developing new products from biomaterials, and biotransformation to synthesize industrial and pharmaceutical products.

**Ecological Engineering** – integrates ecological principles into the design of sustainable systems to treat, remediate, and prevent pollution to the environment. Applications include stream restoration, watershed management, water and wastewater treatment design, ecological services management, urban greenway design and enclosed ecosystem design.

Each student is required to complete 18 semester hours of approved electives in his or her area of concentration. Six hours must be from the biological engineering design elective courses (listed below) from a single area of concentration. The remaining 12 hours are classified as technical electives and consist mainly of upper-division courses in engineering, mathematics, and the sciences as approved by the student's adviser. The selected technical electives must include at least six hours of upper-level engineering courses, either within BENG or from other engineering departments. The department maintains a list of approved electives.

The areas of technical concentration and the recommended elective courses for each are listed here.

#### Biomedical Engineering

##### Design Electives:

BENG 3213 Biomedical Engineering: Emerging Methods and Applications

BENG 4203 Biomedical Engineering Principles

##### Technical Electives:

BIOL 2533/2531L Cell Biology

BIOL 2404 Comparative Vertebrate Morphology, or BIOL 2443/2441L Human Anatomy

BIOL 4234 Comparative Physiology, or BIOL 2213/2211L Human Physiology

BENG 4113 Risk Analysis for Biological Systems

BENG 4123 Biosensors and Bioinstrumentation

BENG 451VH, Honors Thesis

BIOL 4233 Genomics and Bioinformatics

KINS 3353 Mechanics of Human Movement

ELEG 2904 Digital Design

HESC 3204 Nutrition for Health Professionals and Educators

#### Biotechnology Engineering

##### Design Electives:

BENG 4703 Biotechnology Engineering

BENG 4123 Biosensors and Bioinstrumentation

##### Technical Electives:

BENG 4113 Risk Analysis for Biological Systems

BENG 451VH Honors Thesis

FDSC 4304 Food Chemistry

FDSC 4124 Food Microbiology

FDSC 3103 Principles of Food Proc.

BIOL 4233 Microbial Genetics

BIOL 4313 Molecular Cell Biology

CHEM 3453/3451L Elements of Physical Chemistry

MEEG 4413 Heat Transfer

CHEG 3153 Non-equilibrium Mass Transfer

CHEG 4423 Auto. Process Control

HESC 3203 Nutrition for Health Professionals and Educators

## Ecological Engineering

### Design Electives:

- BENG 4903 Watershed Eco-Hydrology  
BENG 4923 Ecological Engineering Design

### Technical Electives:

- BENG 4113 Risk Analysis for Biological Systems  
BENG 4803 Precision Agriculture  
BENG 4133 Digital Remote Sensing and GIS  
BENG 451VH, Honors Thesis  
BIOL 3863/3861L General Ecology  
CVEG 3223 Hydrology  
CVEG 3243 Environmental Engineering  
CVEG 4243 Environmental Engineering Design  
CSES 2203 Soil Science  
CSES 4043 Environmental Impact and Fate of Pesticides  
ENSC 4034 Analysis of Environmental Contaminants

## Biological Engineering Eight-Semester Degree Program

The following section contains the list of courses required for the Bachelor of Science in Biological Engineering degree and a suggested sequence. Some courses are not offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students should note that BIOL 1543/1541L is a pre- or co-requisite to BENG 2612 in the Fall 2 semester and BIOL 2013/2011L in the Spring 2 semester. Students should earn advanced college credit for BIOL 1543/1541L, obtain placement permission from the Biological Sciences Department or take the course for non-degree credit.

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. Students must also take ENGL 2003 during the third year or gain exemption.

Fall Semester Year 1	
1	GNEG 1111 Introduction to Engineering I
3	ENGL 1013 Composition I
3	CHEM 1103 University Chemistry I
4	MATH 2554 Calculus I
4	PHYS 2054 University Physics I
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 1	
1	GNEG 1121 Introduction to Engineering II
3	ENGL 1023 Technical Composition II
4	Freshman Engineering Science Elective*
4	MATH 2564 Calculus II
3	Humanities/Social Science Elective
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 2	
2	BENG 2612 Biological Engr Design Studio II
4	Sophomore Science Elective**
4	MATH 2574 Calculus III
3	CHEM 3603 Organic Chemistry I
1	CHEM 3601L Organic Chemistry I Lab
2	GNEG 1122 Introduction CAD
<b>16</b>	<b>Semester hours</b>
Spring Semester Year 2	
2	BENG 2622 Biological Engineering Design Studio III
4	MATH 3404 Differential Equations
3	CHEM 3613 Organic Chemistry II
1	CHEM 3611L Organic Chemistry II Lab
3	MEEG 2003 Statics

3	BIOL 2013 General Microbiology
1	BIOL 2011L General Microbiology Lab
<b>17</b>	<b>Semester hours</b>
Fall Semester Year 3	
2	BENG 3712 Engineering Properties of Biological Materials
3	CHEM 3813 Introduction to Biochemistry
3	MEEG 2403 Thermodynamics, or CHEG 2313 Thermodynamics of Single Component Systems
3	MEEG 3013 Mechanics of Materials
3	CVEG 3213 Hydraulics, or MEEG 3503 Mechanics of Fluids, or CHEG 2133 Fluid Mechanics
3	Technical Elective
<b>17</b>	<b>Semester hours</b>
Spring Semester Year 3	
3	BENG 3723 Unit Operations in Biological Engr
3	BENG 3803 Mechanical Design in Biological Engr
4	BENG 4104 Instrumentation in Biological Engr
3	BENG Design elective
3	U.S. History Requirement
0	ENGL 2003 Advanced Composition or Exemption
<b>16</b>	<b>Semester hours</b>
Fall Semester Year 4	
3	BENG 4813 Senior Biological Engineering Design I
3	BENG 3733 Transport Phenomena in Biological Systems
3	BENG Design Elective
3	Technical Elective
6	Humanities/Social Science Elective
<b>18</b>	<b>Semester hours</b>
Spring Semester Year 4	
2	BENG 4822 Senior Biological Engr Design II
6	Humanities/Social Science Elective
6	Technical elective
<b>14</b>	<b>Semester hours</b>
<b>128</b>	<b>Total hours</b>

\*The Freshman Engineering Science Elective must be chosen from either CHEM 1123/1121L or PHYS 2074.

\*\* The sophomore Science Elective must be PHYS 2074 (if CHEM 1123/1121L was chosen as the Freshman Engineering Elective) or CHEM 1123/1121L (if PHYS 2074 was chosen as the Freshman Engineering Science Elective. That is, both courses are required for the degree.

SEE PAGE 320 FOR BIOLOGICAL ENGINEERING (BENG) COURSES.

## CHEMICAL ENGINEERING (CHEG), RALPH E. MARTIN DEPARTMENT OF

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- Distinguished Professor Havens
- Distinguished Professors Emeriti Gaddy, Thatcher
- University Professor Emeritus Turpin
- Professors Babcock, Beitle, Clausen, King, Penney, Spicer, Thoma, Ulrich
- Professors Emeriti Couper, Cross, Welker
- Research Professor Silano
- Associate Professors Ackerson, Roper
- Assistant Professors Hestekin (C.), Hestekin (J.), Servoss
- Instructor Emeritus Myers
- Adjunct Professors Cheung, Muralidhara, Siebenmorgen, Sublette
- Adjunct Associate Professor Eason



Chemical engineering deals with the creation, design, operation, and optimization of processes that derive practical benefits from chemical or physical changes principally involving chemical and biochemical reactions. The profession is quite broad and has traditionally provided the technology for: supplying energy and fuel; synthesizing materials such as plastics, chemicals, fertilizers, and pharmaceuticals; and managing environmental and safety concerns of physical and chemical processes. Some new applications of the principles of chemical engineering at nanoscales are being made in sustainable energy production and detection of gene mutations, protein configurations, and virus serotypes as well as thermal destruction of cancer cells.

Chemical engineers have a variety of traditional job opportunities in industries such as petroleum production and processing, chemical manufacturing, food processing, pharmaceutical production, and process equipment manufacturing. Job opportunities may involve research, development, design, manufacturing, sales, or teaching as professional activities. The chemical engineer can also move easily into environmental engineering, nuclear engineering, oceanography, biomedical engineering, pharmacology, law, medicine, or other multidisciplinary fields.

In chemical engineering, students obtain a broad foundation in chemistry, mathematics, physics, communication skills, economics, and the humanities. Courses in material and energy balances, thermodynamics, reaction kinetics, fluid mechanics, heat and mass transfer, process control, computer methods, safety, and design provide students with the background and learning skills required of the practicing chemical engineer. The curriculum includes elective courses that enable a student to prepare for immediate employment or further study at the graduate level or the professional level, such as for medical school. The chemical engineering program also serves as an excellent preparation for dental, pharmacy, or law school.

The educational objective of the chemical engineering undergraduate program is to provide students with a foundation in mathematics and the basic sciences, the humanities and social sciences, engineering sciences, engineering design methods, and specific chemical engineering skills, and to thereby prepare them, in a global context, to face the challenges of today's complex and difficult problems.

Chemical engineering skills include mass and energy balances, single and multi-component thermodynamics, basic fluid mechanics, heat and mass transfer operations, process economics, process design, process safety, process control, and laboratory practice. Chemical engineering principles are applied to biological processes in several courses in the undergraduate curriculum including Fundamentals of Chemical Engineering, Chemical Process Safety, and CHEG elective courses as well as undergraduate research opportunities. No specific background in biology is required for this work. The list of upper level chemistry electives includes courses in biochemistry which provides students the opportunity to supplement their background in biochemistry if desired.

The educational outcomes of our four-year curriculum are to assure that each student has had the opportunity to:

- apply knowledge of mathematics, science, and engineering;
- locate, interpret, and use physical property data; when data are unavailable, design and conduct experiments, and interpret the resulting data;
- design a system, component, or process to meet desired needs including, for example, determining the capital and operating costs for chemical process equipment and performing technical economic projections;
- function in multi-disciplinary teams;
- identify, formulate, and solve engineering problems including, for example, development of critical thinking processes and the solution of mass and energy balances;
- understand professional and ethical responsibility;

- develop and use effective written and oral communication skills;
- recognize the need to engage in life-long learning;
- understand the impact of engineering solutions in a global or societal context including, for example, being conscious of social, environmental, and safety concerns; and
- be familiar with contemporary issues; and
- use the techniques, skills, and modern engineering tools necessary for engineering practice including, for example, writing structured computer programs and using commercially available technical computer software.

These outcomes are reinforced and demonstrated in a senior capstone safety and design course sequence.

### Freshman Engineering Program

Adequate preparation in chemistry is critically important to the success of students pursuing a Bachelor of Science in Chemical Engineering. Entering freshmen who do not qualify for CHEM 1123 University Chemistry II (and its associated lab CHEM 1121L) are strongly advised to pursue a B.S.Ch.E. by entering the College through its Freshman Engineering Program. Students enrolled in the Freshman Engineering Program should take CHEM 1123 and CHEM 1121L in their second semester. Students who successfully complete the Freshman Engineering Program in their first year (including CHEM 1123 and CHEM 1121L) can complete a B.S.Ch.E. in six additional semesters (eight semesters total).

### Chemical Engineering Eight-Semester Degree Program

The following section contains the list of courses required for the Bachelor of Science in Chemical Engineering degree and a suggested sequence for students who do not enter the College through the Freshman Engineering Program. Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program. Entering freshmen will be required to participate in selected Freshman Engineering Student Services.

Students must also take ENGL 2003 during the third year or gain exemption.

#### Fall Semester Year 1

4	MATH 2554 Calculus I
3	CHEM 1123 University Chemistry II
1	CHEM 1121L University Chemistry II Lab
3	ENGL 1013 Composition I
3	CHEG 1113 Intro. to Chem Engr I
3	HIST 2003 Hist./American People to 1877 (HIST 2013 or PLSC 2003 may be substituted.)
<b>17</b>	<b>Semester hours</b>

#### Spring Semester Year 1

4	MATH 2564 Calculus II
3	CHEG 1123 Intro. to Chem Engr II
3	ENGL 1023 Composition II
2	CHEG 1212L Chemical Engr Lab I
3	Humanities/social science core elective
<b>15</b>	<b>Semester hours</b>

#### Fall Semester Year 2

4	MATH 2574 Calculus III
3	CHEM 3603 Organic Chemistry I
1	CHEM 3601L Organic Chemistry I Lab
4	PHYS 2054 University Physics I
0	PHYS 2050L University Physics Lab I

1	CHEG 2221 Professional Practice Seminar 3 Thermodynamics of Single Component Systems	CHEG 2313
<b>16</b>	<b>Semester hours</b>	
<b>Spring Semester Year 2</b>		
4	MATH 3404 Differential Equations	
3	CHEM 3613 Organic Chemistry II	
1	CHEM 3611L Organic Chemistry II Lab	
4	PHYS 2074 University Physics II	
0	PHYS 2070L University Physics II Lab	
3	CHEG 2133 Fluid Mechanics	
3	CHEG 3323 Thermodynamics of Multicomponent Systems	
<b>18</b>	<b>Semester hours</b>	
<b>Fall Semester Year 3</b>		
4	CHEM Elective	
3	MEEG 2003 Statics	
3	CHEG 3143 Heat Transport	
2	CHEG 3232L Chemical Engr Lab II	
3	CHEG 3253 Chem Engr Computer Methods	
3	Humanities/social science core elective	
<b>18</b>	<b>Semester hours</b>	
<b>Spring Semester Year 3</b>		
4	CHEM Elective	
3	MEEG 3013 Mechanics of Materials	
3	CHEG 3333 Chem Engr Reactor Design	
3	CHEG 3153 Non-Equil Mass Transfer	
3	ECON 2143 Basic Economics (ECON 2013 Principles of Macroeconomics may be substituted.)	
0	ENGL 2003 Advanced Composition or Exemption	
<b>16</b>	<b>Semester hours</b>	
<b>Fall Semester Year 4</b>		
3	CHEG 4163 Equil Stage Mass Transfer	
3	CHEG 4413 Chem Engr Design I	
3	CHEG 4813 Chemical Process Safety	
3	Technical elective	
3	Humanities/social science core elective	
<b>15</b>	<b>Semester hours</b>	
<b>Spring Semester Year 4</b>		
2	CHEG 4332L Chem Engr Lab III	
3	CHEG 4443 Chem Engr Design II	
3	ELEG 3903 Electric Circuits and Machines	
3	CHEG 4423 Auto Process Control	
3	Technical elective	
3	Humanities/social science core elective	
<b>17</b>	<b>Semester hours</b>	
<b>132</b>	<b>Total hours</b>	

### Technical Elective Options in Chemical Engineering

Each student in chemical engineering is required to complete six semester hours of technical electives. Students may select these courses from upper division (3000 and above) courses in mathematics, engineering, and the sciences with the approval of their adviser. An undergraduate education in chemical engineering provides a firm foundation for many areas of specialization. The following groups of courses can strengthen the background of a student in a particular area of expertise; note that other technical electives are included on the list approved by the department and that not all of the following courses will meet the requirements of a technical elective.

#### Biotechnology/Biomedical Engineering

CHEG 5513 Biochemical Engineering Fundamentals  
CHEG 5523 Bioprocessing  
CHEM 3813 Introduction to Biochemistry, or

CHEM 5813 Biochemistry I, or

CHEM 5843 Biochemistry II

BIOL 2323/2321L General Genetics

CEMB 5911 Seminar in Cellular/Molecular Biology

#### Chemical Process Safety

CHEG 5273 Corrosion Control

INEG 4223 Occupational Safety and Health Standards

FDSC 4223 Risk Analysis for Biological Systems

OMGT 4303 Industrial Safety Administration

#### Environmental Engineering

CHEG 5753 Air Pollution

CHEG 4263 Environmental Experimental Methodology

CHEG 4913 Environmental Engineering Chemodynamics

CHEG 5273 Corrosion Control

CVEG courses on an approved list available from the department.

#### Food Process Engineering

BENG 4703/4700L Biotechnology Engineering

BENG 3712 Engineering Properties of Biological Materials

FDSC 4713/4710L Food Product and Process Development

FDSC 4124 Food Microbiology

FDSC 4223 Risk Analysis for Biological Systems

FDSC 4304/4300L Food Chemistry

#### Materials Science and Engineering

CHEG 5273 Corrosion Control

CHEG 5733 Polymer Theory and Practice

MEEG 4303 Materials Laboratory

#### Microelectronics

CHEG 5613 Microelectronics Fabrication and Materials

ELEG 4203 Semiconductor Devices

PHYS 3614 Modern Physics

MATH 3423 Advanced Applied Mathematics

#### Nuclear Power Engineering

CHEG 5273 Corrosion Control

CHEM 5263 Nuclear Chemistry

#### Pre-medicine

BIOL 1543/1541L Principles of Biology

CHEM 3813 Introduction to Biochemistry

BIOL 2013/2011L General Microbiology

BIOL 2213/2211L Human Physiology

BIOL 2443/2441L Human Anatomy

#### Simulation and Optimization

CHEG 5033 Technical Administration

CHEG 5213 Advanced Chemical Engineering Calculations

INEG 3313 Engineering Statistics

INEG 3613 Introduction to Operations Research

INEG 4623 Introduction to Simulation

MATH 3083 Linear Algebra

SEE PAGE 325 FOR CHEMICAL ENGINEERING (CHEG) COURSES.

## CIVIL ENGINEERING (CVEG)

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- University Professor Elliott
- Professors Buffington, Dennis, Gattis, Hall, Selvam, Wang, Young
- Associate Professors Edwards, Hale, Heymsfield, Soerens
- Associate Professor Emeriti Pleimann
- Assistant Professors Cox, Fairey, Grimmelman, Williams (R.), Williams (S.)

Civil engineering is the oldest of all the engineering fields, yet it is as contemporary as the need to provide solutions to today's environmental problems and to develop advanced transportation systems. The civil engineer plans, designs, builds, and operates projects for the advancement and well being of society while coordinating and conserving human and natural resources. Civil engineering projects range from small to monumental and include public water systems, buildings, bridges, rail and highway networks, wastewater treatment plants, solid and hazardous waste disposal facilities, airports, and soil conservation and flood diversion controls.

The civil engineering profession offers a vast array of opportunities. Civil engineers may work in private employment or with public agencies. They may work indoors in activities such as planning and design, or outdoors in areas such as construction supervision. Employment is possible anywhere in the world.

The objectives of the civil engineering program are to produce graduates who are:

1. employable in any of the following fields: foundation, earthwork, and embankment design and analysis; water, wastewater, and waste handling and treatment; highway facility design and operation; and structural design and analysis.
2. academically prepared to pursue licensure as a Professional Engineer.
3. prepared to pursue an advanced education.

To fulfill these objectives, all students must take courses in geotechnical, environmental, transportation, and structural engineering. Courses are designed to present "real world" applications without sacrificing conceptual and theoretical basics. Students complete design problems in each of these areas; and, as part of the senior year, they participate in two major design projects.

### Civil Engineering Eight-Semester Degree Program

The following section contains the list of courses required for the Bachelor of Science in Civil Engineering degree and a suggested sequence. Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

Students must also take ENGL 2003 during the third year or gain exemption.

Fall Semester Year 1	
3	ENGL 1013 Composition I
4	MATH 2554 Calculus I
3	CHEM 1103 University Chemistry I
4	PHYS 2054 University Physics I
0	PHYS 2050L University Physics I Lab
1	GNEG 1111 Introduction to Engineering I
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 1	
3	ENGL 1023 Technical Composition II

4	Freshman Science Elective
0	Freshman Science Elective Lab
4	MATH 2564 Calculus II
3	Humanities/social science elective
1	GNEG 1121 Introduction to Engineering II
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 2	
4	MATH 2574 Calculus III
3	MEEG 2003 Statics
3	Humanities/social science elective
3	CVEG 2053 Surveying Systems
1	CVEG 2051L Surveying Systems Lab
2	GNEG 1122 Introduction CAD
<b>16</b>	<b>Semester hours</b>
Spring Semester Year 2	
3	CVEG 2113 Structural Materials
3	INEG 3313 Engineering Statistics
4	MATH 3404 Differential Equations
3	MEEG 3013 Mechanics of Materials
2	GEOL 3002 Geology for Engineers
3	Humanities/Social Science Elective
<b>18</b>	<b>Semester hours</b>
Fall Semester Year 3	
4	CVEG 3304 Structural Analysis
3	CVEG 3133 Soil Mechanics
3	CVEG 3213 Hydraulics
3	CVEG 3413 Transportation Engineering
4	Science Elective
<b>17</b>	<b>Semester hours</b>
Spring Semester Year 3	
2	CVEG 3022 Public Works Economics
3	CVEG 3223 Hydrology
3	CVEG 3243 Environmental Engineering
3	CVEG 4313 Structural Steel Design I
3	Humanities/social science elective
3	Engineering Elective
0	ENGL 2003 Advanced Composition or Exemption
<b>17</b>	<b>Semester hours</b>
Fall Semester Year 4	
3	CVEG 4143 Foundation Engineering
3	CVEG 4303 Reinforced Concrete Design I
3	CVEG 4433 Transportation Pavements and Materials
2	CVEG 4852 Professional Practice Issues
3	Engineering elective
3	Humanities/social science elective
1	Civil Engineering design elective
<b>18</b>	<b>Semester hours</b>
Spring Semester Year 4	
3	CVEG 4243 Environmental Engineering Design
3	CVEG 4513 Construction Management
6	Engineering electives
1	Civil Engineering design elective
3	Humanities/social science elective
<b>16</b>	<b>Semester hours</b>
<b>132</b>	<b>Total hours</b>

### Elective Courses

Students must select four 3-hour engineering elective courses in conference with their adviser. The selection must include at least three civil engineering courses. The fourth course can be a civil engineering course or one of the following: MEEG 2013 Dynamics, MEEG 2403 Thermodynamics, or ELEG 3903 Electric Circuits and Machines. Normally, the civil engineering courses

are selected from among the 4000-level elective CVEG courses. Exceptional students may be allowed to choose from the 5000 (graduate-level) course series. Humanities and social science electives are selected from courses approved by the college. Lists of approved electives are on file in the department office. All civil engineering students must complete CHEM 1103 University Chemistry I and CHEM 1123/1121L University Chemistry II. Students may choose to complete CHEM 1123/1121L University Chemistry II as the Freshman Science Elective (as part of the Freshman Engineering Program); in such cases, the Civil Engineering Science Elective requirement is satisfied by completing one of the following course sequences: CHEM 3603 and CHEM 3601L, Organic Chemistry, GEOL 3514, Structural Geology, BIOL 2013 and BIOL 2011L, General Microbiology, or PHYS 2074 and PHYS 2070L, University Physics II. As an alternative, students may choose to complete PHYS 2074/2070L University Physics II as the Freshman Science Elective (as part of the Freshman Engineering Program); in such cases, the Civil Engineering Science Elective requirement is satisfied by completing CHEM 1123/1121L University Chemistry II. Students are advised that a grade of "C" or better in both CHEM 1123 (University Chemistry II) and CHEM 1121L (University Chemistry II Lab) is required to receive credit for CHEM 1101L (University Chemistry I Lab).

### Civil Engineering Design Electives

Students must complete two of the following four CVEG design project electives: CVEG 4811 Environmental Design Project, CVEG 4821 Geotechnical Design Project, CVEG 4831 Structural Design Project, and CVEG 4841 Transportation Design Project. Each design project elective is associated with a specific design-oriented course. The associated course must be taken at the same time as the design project elective. The associated courses may be taken alone but the design electives cannot.

### Honors Program Requirements

Students enrolled in the Honors College who are to receive the Bachelor of Science in Civil Engineering must complete a minimum of 12 hours of honors credit. At least 6 hours must be completed within the Civil Engineering program including at least 3 hours resulting in an Honors Thesis. The CVEG honors courses are acceptable as engineering electives and in some cases may be substituted for required courses. The following Civil Engineering courses are offered for honors credit: CVEG 491V H Honors Studies in Geotechnical Engineering, CVEG 492V H Honors Studies in Environmental Engineering, CVEG 493V H Honors Studies in Structural Engineering, CVEG 494V H Honors Studies in Transportation Engineering, and CVEG 4983 H Undergraduate Honors Thesis.

SEE PAGE 335 FOR CIVIL ENGINEERING (CVEG) COURSES.

## COMPUTER SCIENCE AND COMPUTER ENGINEERING (CSCE)

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- Professors Andrews, Apon, Crisp, Deaton, Gauch (J.), Gauch (S.), Li, Panda, Thompson (C.)
- Associate Professors Beavers, Parkerson, Thompson (D.)
- Assistant Professors Di, Shen

The faculty of the Computer Science and Computer Engineering Department is engaged in multidisciplinary academic research, course offerings, and student projects in areas such as: high performance and scientific computing, grid computing, middleware, networking, data security, nanotechnology,

graph theory, and subsystem design.

The educational objectives of the department are to produce graduates who are recruited in a competitive market and make valuable contributions to a wide variety of industries, particularly in computer and information technology; succeed in graduate or professional studies; pursue life-long learning and continued professional development; and undertake leadership roles in their profession, in their communities, and in the global society.

The computer engineering degree has required sequences of courses in both hardware and software aspects of computer applications and design. Since almost all of today's complex systems encompass hardware and software elements, computer engineering graduates must acquire the skills required to design, build, and test complex digital systems. At the advanced level, students are exposed to hands-on experience with open-ended problems with opportunities for research and design.

A degree in computer science provides a wide variety of career choices. Computer science graduates can design, implement, or manage computer systems, as well as adapt computers to new applications. Computer science core courses include the fundamentals of programming concepts, data structures, operating systems, algorithms, formal languages, database management systems, and programming languages.

The CE and CS programs culminate in a capstone project completed in two consecutive semesters. In the first semester, students form teams and develop a project proposal. In the second semester, students develop, implement, and present the final project.

Humanities and social science electives are selected from courses approved by the College of Engineering. This list is available on the CSCE Web site at <http://www.csce.uark.edu> in the advising section. The Undergraduate Handbook has a list of approved basic science, mathematics, and technical electives. Any course not included in these lists requires faculty approval.

The following sections contain the list of courses required for the Bachelor of Science in Computer Engineering (B.S.Cmp.E.) and the Bachelor of Science in Computer Science (B.S.C.S.) degrees and suggested sequences for each.

Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eight-semester degree plan should see Page 42 in the Academic Regulations chapter for university requirements of the program.

### Computer Engineering Eight-Semester Degree Program

Fall Semester Year 1	
4	MATH 2554 Calculus I
3	CHEM 1103 University Chemistry I
4	PHYS 2054 University Physics I
1	GNEG 1111 Introduction to Engineering I
3	ENGL 1013 English Composition
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 1	
4	MATH 2564 Calculus II
4	Freshman Science elective*
3	Social Science elective
1	GNEG 1121 Introduction to Engineering II
3	ENGL 1023 Composition II
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 2	
4	MATH 2574 Calculus III
4	CSCE 2004 Programming Foundations I
3	CSCE 2114 Digital Design
3	Discrete Math
<b>15</b>	<b>Semester hours</b>

Spring Semester Year 2	
4	MATH 3404 Differential Equations
4	CSCE 2214 Computer Organization
4	CSCE 2014 Programming Foundations II
3	History/Government elective
3	Social Science elective
<b>18</b>	<b>Semester hours</b>
Fall Semester Year 3	
3	CSCE 3953 System Synthesis and Modeling
3	CSCE 3193 Programming Paradigms
3	PHIL 3103 Ethics & the Professions
4	Basic Science elective with lab**
3	Free elective
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 3	
3	CSCE 3613 Operating Systems
3	CSCE 3513 Software Engineering
3	ELEG 3933 Circuits and Electronics
3	CSCE Elective
3	STAT 3013 Introduction to Probability and Statistics (INEG 3313 may be substituted)
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 4	
1	CSCE 4561 Capstone I
4	CSCE 4114 Embedded Systems
3	CSCE Elective
3	CSCE Elective
3	Humanities/Social Science elective
3	Free Elective
<b>17</b>	<b>Semester hours</b>
Spring Semester Year 4	
3	CSCE 4963 Capstone II
3	CSCE 4213 Computer Architecture
3	CSCE elective
3	CSCE elective
3	Humanities/social sciences elective (3000+)
<b>15</b>	<b>Semester hours</b>
<b>126</b>	<b>Total hours</b>

\* Choose between PHYS 2074 University Physics II or CHEM 1123/1121L University Chemistry II and lab

\*\* If a student does not take CHEM 1123/1121L, - a lab will be required with the basic science elective

### Computer Science Eight-Semester Degree Program

Fall Semester Year 1	
4	MATH 2554 Calculus I
4	PHYS 2054 University Physics I
3	CHEM 1103 University Chemistry I
1	GNEG 1111 Introduction to Engineering I
3	ENGL 1013 English Composition
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 1	
4	MATH 2564 Calculus II
4	Freshman Science elective*
1	GNEG 1121 Intro to Engineering II
3	ENGL 1023 Composition II
3	Social Science elective
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 2	
3	MATH 2103 Discrete Math
4	Basic Science elective with lab**

4	CSCE 2004 Programming Foundations I
4	CSCE 2114 Digital Design
3	History/Government elective
<b>18</b>	<b>Semester hours</b>
Spring Semester Year 2	
3	MATH 3103 Combinatorics
4	CSCE 2014 Programming Foundations II
4	CSCE 2214 Computer Organization
3	Humanities elective
3	Social Science elective
<b>16</b>	<b>Semester hours</b>
Fall Semester Year 3	
3	CSCE 3193 Programming Paradigms
3	CSCE 3313 Algorithms
3	Free Elective
3	MATH 3083 Linear Algebra
3	PHIL 3103 Ethics and the Profession
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 3	
3	CSCE 3613 Operating Systems
3	CSCE 3513 Software Engineering
3	Free elective
3	STAT 3013 Introduction to Probability and Statistics (INEG 3313 can be substituted)
3	Social Science elective
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 4	
1	CSCE 4561 Capstone I
3	CSCE 4523 Database Management
3	CSCE elective
3	CSCE elective
3	CSCE elective
3	Humanities/social sciences elective
<b>16</b>	<b>Semester hours</b>
Spring Semester Year 4	
3	CSCE 4963 Capstone II
3	CSCE elective
3	CSCE 4323 Formal Languages
3	Free elective
3	Humanities/social sciences elective (3000+)
<b>15</b>	<b>Semester hours</b>
<b>126</b>	<b>Total hours</b>

\* Choose between PHYS 2074 University Physics II or CHEM 1123/1121L University Chemistry II and lab

\*\* If a student does not take CHEM 1121L, a lab will be required with the basic science elective

### Degree Program Changes

Students must meet all requirements of their degree programs and are expected to keep informed concerning current regulations, policies, and program requirements in their fields of study. Changes made in the curriculum at a level beyond that at which a student is enrolled might become graduation requirements for that student. Changes made in the curriculum at a level lower than the one at which a student is enrolled are not required of that student. Students should consult their departmental adviser for additional information.

### Requirements for Departmental Honors in Computer Science and Computer Engineering

The Honors Program in Computer Science and Computer Engineering is designed for the superior student and is intended to help the student develop a more comprehensive view of Computer Science and Computer Engineering.

The program provides a vehicle for the recognition of achievements beyond the usual course of study. Higher degree distinctions are recommended only in truly exceptional cases and are based upon the candidate's whole program of honors studies. A minimum of 12 hours of honors coursework is required.

The following requirements are necessary for graduation with honors in either the Computer Engineering or Computer Science Bachelor of Science program:

1. The candidate must satisfy the requirements set forth by the College of Engineering.
2. A student must obtain at least a 3.50 grade-point average in required Computer Engineering and/or Computer Science courses.
3. The student must complete 7 hours of Honors credit in the major, which includes 4 hours of Honors Thesis taken as two successive semesters of CSCE 4912H and 3 hours of CSCE coursework.

#### **Requirements for the Bachelor of Arts degree with a Major in Computer Science (B.A.C.S):**

The requirements and semester plan for the Computer Science B.A. degree are listed in the Fulbright College chapter.

#### **Requirements for a Minor in Computer Science:**

CSCE 2004, CSCE 2014, CSCE 3193, and three additional CSCE courses numbered above 2000.

SEE PAGE 333 FOR COMPUTER SCIENCE AND COMPUTER ENGINEERING (CSCE) COURSES.

## **ELECTRICAL ENGINEERING (ELEG)**

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- Professors Ang, Balda, Manasreh, Mantooth, Martin, Naseem
- Associate Professors Brown (R.L.), El-Shenawee, McCann
- Assistant Professors Ji, Yu, Wu
- Distinguished Professor Emeritus Brown, Yeargan
- University Professor Emeritus Schmitt
- Professors Emeriti Jones, Mix, Schaper, Stephenson, Waite, Webb
- Associate Professor Emeritus Caldwell, Gattis

Electrical engineering is a professional engineering discipline that in its broader sense covers the study and application of electricity, electronics and electromagnetism. Electrical engineers are in charge of designing and utilizing electrical and electronic components, integrated circuits and chips, computer chips, and electronic assemblies to benefit mankind. Fields of electrical engineering are artificial intelligence, bioengineering, computer hardware and software, control systems, digital electronics, electric energy systems, electronics including microelectronics, mixed signal electronics, nanotechnology and optoelectronics, signal processing and telecommunications.

The electrical engineering graduate is at the forefront of technologies leading to accelerated use of electric power, applications of real time embedded control systems for smart highways, smart vehicles and smart gadgets, global communications, the dominating influence of the computer on modern society, the use of electronic equipment for medical diagnosis, the use of wireless chemical and biological nanosensors for hazard detection, the miniaturization of electronics, and a host of other developments. Therefore, the use of electrical and electronic

equipment has spread into such diverse areas as agricultural production, automobiles, computer hardware and networks, health care, information technology, manufacturing, marketing, recreation, renewable energy resources, space and underwater exploration, transportation, and many others. As a result, electrical engineering is the largest of all scientific disciplines and assures a continuing demand for electrical engineering graduates throughout business and government.

The University of Arkansas, the state land-grant university, is a nationally competitive, student-centered, research university serving Arkansas and the world. As such, our mission is education, research, and service. Hence, the electrical engineering program is designed to offer a high-quality course of instruction involving classroom, laboratory, and extracurricular activities that results in graduates qualified and prepared to meet the demands of a professional career in the present and future work places as well as to assume a responsible place of leadership in a complex technological society.

The educational mission of the department is conducted through both the undergraduate and graduate programs.

### **Undergraduate Program in Electrical Engineering**

The educational objectives for the undergraduate program, which leads to a Bachelor of Science degree in electrical engineering, are to produce graduates who:

1. Are recruited in a competitive market and valued as reliable and competent employees by a wide variety of industries, in particular, electrical and computer engineering industries;
2. Succeed, if pursued, in graduate studies such as engineering, science, law, medicine, business, and other professions;
3. Understand the need for life-long learning and continued professional development for a successful and rewarding career; and
4. Accept responsibility for leadership roles in their profession, in their communities, and in the global society.

Therefore, the electrical engineering curriculum is designed to provide students with knowledge of scientific principles and methods of engineering analysis to form a solid foundation for a career in design, research and development, manufacturing and processing, measurement and characterization, or management. Students progressively build their design experience throughout the curriculum and demonstrate this ability in the senior electrical engineering design laboratories. The curriculum also introduces students to subjects in the humanities, social sciences, and ethics so they may better understand the interaction of technology and society.

The electrical engineering curriculum is divided into three phases. The first year concentrates on the development of a sound understanding of basic sciences and mathematics. The second and third years further develop scientific principles and cover the basic core of electrical engineering. The fourth year is composed primarily of senior-level elective courses. At this time, the students in consultation with their advisors may choose to concentrate in one or more of the technical specializations within electrical engineering (such as control systems, digital or computer hardware, electric power and power electronics, electromagnetics, electronics, microelectronics, mixed-signal electronics, nanotechnology, power electronics, and sensors). This final year permits the student to tailor a program suited to her or his individual career objectives. The graduation requirement in electrical engineering is 125 semester hours as given below.

The department also participates in the Honors Program to challenge superior students with a more in-depth academic program and research experience. The Honors program enables students to work more closely with faculty members and other students in a team environment. Please see the requirements given below.

### **Graduate Program in Electrical Engineering**

The graduate program offers a Master of Science degree in Electrical Engineering, a Master of Science degree in Engineering, a Master of Science degree in Engineering, and a Doctor of Philosophy degree in Engineering. The

graduate program provides additional instruction and hands-on experience beyond the undergraduate level, and produces graduates who are prepared to promptly address critical issues and assume advanced positions in the profession, including management, design, and development.

The research mission of the department is conducted mainly through the graduate program. Internal and external funded research projects serve to:

1. Discover new knowledge, address technical problems, and develop new electrical/electronic technologies;
2. Provide the tools and resources which keep our faculty at the cutting edge of electrical engineering;
3. Provide financial support for graduate students and gifted undergraduate students; and
4. Improve the quality of life for citizens of Arkansas and the world.

The graduate program supports the undergraduate program by giving top undergraduate students access to research laboratories with state-of-the-art equipment and software. Topics covered in graduate courses often migrate into senior undergraduate technical elective courses and eventually into required undergraduate courses.

### Departmental Service Mission

Faculty, students, administrators, and staff conduct the service mission of the department and serve as a major resource for the state, the region, the nation and the world. Faculty members are encouraged to provide services to both the community and the profession. Hence, they are active in local, state, national, and international professional and service organizations, as well as public and private schools involving grades K-12.

### Electrical Engineering Eight-Semester Degree Program

The following section contains the list of courses required for the Bachelor of Science in Electrical Engineering and a suggested eight-semester sequence. Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites.

Students are required to take ENGL 2003 Advanced Composition or gain exemption.

Fall Semester Year 1	
1	GNEG 1111 Introduction to Engineering I
3	ENGL 1013 Composition I
4	MATH 2554 Calculus I
3	CHEM 1103 University Chemistry I
4	PHYS 2054 University Physics I
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 1	
1	GNEG 1121 Introduction to Engineering II
3	ENGL 1023 Technical Composition
4	MATH 2564 Calculus II
4	Freshman Science Elective*
3	University Core Elective**
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 2	
3	ELEG 2103 Electric Circuits I
1	ELEG 2101L Electric Circuits I Lab
4	ELEG 2904 Digital Design I
4	MATH 2574 Calculus III
4	Sophomore Science Elective***
<b>16</b>	<b>Semester hours</b>
Spring Semester Year 2	
3	CSC 2004 Programming Foundations I
3	ELEG 2113 Electric Circuits II

1	ELEG 2111L Electric Circuits II Lab
4	MATH 3404 Differential Equations
3	History/Government Requirement
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 3	
3	ELEG 3123 Systems and Signals
1	ELEG 3121L System & Signal Lab
3	ELEG 3213 Electronics I
1	ELEG 3211L Electronics I Lab
3	ELEG 3923 Microprocessor Systems Design
4	CSC 2014 Programming Foundations II
0	ENGL 2003 Advanced Composition or exemption
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 3	
3	ELEG 3223 Electronics II
1	ELEG 3221L Electronics II Lab
3	ELEG 3303 Electromechanical Energy Conversion
1	ELEG 3301L Electromechanical Energy Conversion Lab
3	ELEG 3703 Electromagnetics
3	Humanities/Social Science Elective
3	Math/Science Elective
<b>14</b>	<b>Semester hours</b>
Fall Semester Year 4	
1	ELEG 4061 Electrical Engineering Design I
3	ELEG 4143 Stochastic Signal Processing
3	Electrical Eng Technical Elective
3	Engineering Science Elective
3	Technical Elective
3	Upper-Level Humanities/Social Science elective
<b>16</b>	<b>Semester hours</b>
Spring Semester Year 4	
1	ELEG 4071 Electrical Engineering Design II
6	Electrical Eng Technical Elective
3	Technical Elective
3	Upper-Level Humanities/Social Science Elective
3	Humanities/Social Science Elective
<b>16</b>	<b>Semester hours</b>
<b>125</b>	<b>Total hours</b>

\* Freshman Science Elective - CHEM 1123/1121L – University Chemistry II or PHYS 2074 – University Physics II

\*\* Approved Humanities/Social Science course

\*\*\* PHYS 2074 if student took CHEM 1123/1121L in the Freshman Year. Otherwise, CHEM 1123/1121L or approved 4 hours in Science

Students should become very familiar with the Academic Regulations chapter for university requirements that apply to the electrical engineering program as well as the College of Engineering requirements (in particular the "D rule" and the "Transfer of Credit" for courses taken at another institution). In addition to these graduation requirements, candidates for an electrical engineering degree must have earned a grade-point average of no less than 2.00 on all ELEG courses excluding ELEG laboratories.

### Degree Program Changes

A student must meet all requirements of the degree programs and is expected to stay informed concerning current regulations, policies, and program requirements in a chosen field of study. Changes made in the electrical engineering curriculum at a level beyond that at which a student is enrolled may become graduation requirements for that student. Changes made in the curriculum at a level lower than the one at which a student is enrolled are not normally required for that student. Students should consult their adviser for additional information.

### Electrical Engineering Honors Program

To graduate with Honors in electrical engineering, students must be a member of the Honors College, have a minimum cumulative GPA of 3.50, and complete a minimum of 12 hours of honors credit of which 6 hours must be Electrical Engineering courses that include the following: ELEG 4061H – Honors Electrical Engineering Design I, ELEG 4071H – Honors Electrical Engineering Design II, and ELEG 4081H – Senior Thesis.

### Recommended Technical Studies

Students in electrical engineering are required to complete 15 semester hours of technical electives of which a minimum of 9 semester hours must be 4000- or 5000-level electrical engineering elective courses. A student may select the remaining 6 semester hours from 4000- or 5000-level electrical engineering elective courses or upper-division technical courses in mathematics, engineering, and the sciences with the approval of an adviser. History and social science courses taught by Math and Science departments are not eligible for technical elective credit. Not more than 6 semester hours in ELEG 488V and ELEG 489V may be credited toward technical electives. Students who have taken the required number of full-time co-op experiences under GNEG 3811, and whose grades in these courses were A or B, may get credit for three hours of non-ELEG technical electives if the work performed is of comparable quality to a technical elective; consult with the Department Co-op Coordinator. Descriptions of all electrical engineering courses are in the Course Descriptions chapter of this Catalog of Studies. The schedule of technical electives offered in a given semester is determined the previous semester since the selection depends on a number of varying factors such as student interest in a particular topic, the importance of a particular technology for the student's professional career, and teaching faculty availability.

SEE PAGE 340 FOR ELECTRICAL ENGINEERING (ELEG) COURSES.

### INDUSTRIAL ENGINEERING (INEG)

Kim LaScola Needy  
Head of the Department  
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- Distinguished Professor Rardin, White
- Professors Cassidy, Johnson, Meller, Needy
- Associate Professors Chimka, Fant, Mason, Nachtmann, Pohl, Rossetti
- Assistant Professors Buyurgan, Nam, Root
- Adjunct Associate Professor Gattis

The mission of the industrial engineering department at the University of Arkansas is to be a nationally competitive, student-centered industrial engineering program serving Arkansas and the world through undergraduate and graduate studies and leading-edge research programs.

Industrial engineers are concerned with improving organized activity. The physical arrangement of people, equipment, and material significantly influences the effectiveness of any organization — whether the organization is industrial, governmental, or commercial.

Today's industrial engineers develop applications of new processing automation and control technology; install data processing systems, performance measures and standards, job evaluation and wage and salary programs; research new products and product applications; devise ways to improve productivity through application of technology and human factors; select operating processes and methods to accomplish a given task using proper tools and equipment; design facilities, management systems, operations procedures, storage systems; improve allocation of resources, planning and control systems for distribution

of goods and services, production, inventory, quality and plant maintenance; enhance plant environment and the quality of working life; evaluate reliability and quality performance; implement office systems, procedures, and policies; analyze complex business problems through operations research; conduct long-range organization studies, plant location surveys, system effectiveness studies; and study potential markets for goods and services, raw material sources, labor supply, energy resources, financing and taxes.

Industrial engineers integrate engineering skills with mathematics and computer science tools, providing systematic ways to maximize productivity and quality while minimizing time and cost.

The goal of the Industrial Engineering Undergraduate Program at the University of Arkansas is to prepare men and women for professional careers and graduate studies in Industrial Engineering. We provide a foundation in mathematics, science, humanities and social sciences, engineering science, and engineering design to produce Industrial Engineers with the intellectual, technical, and professional competence to develop, implement, and manage industrial engineering solutions to complex problems in industry, government, and society.

The IE Program Objectives represent and describe the expected accomplishments of our graduates resulting from participation within our program within the first few years after graduation. Our objectives have been developed to address the needs of our constituencies and to be consistent with and support our mission and programmatic goals. The IE Program Objectives are as follows:

1. To demonstrate the ability to apply core IE fundamentals as a practicing industrial engineer. Core industrial engineering topics include such topics as probability, statistics, engineering economics, human factors, engineering management, computing, and operations research applied to manufacturing, logistics, and service systems.
2. To demonstrate written/oral, teamwork, and professional skills within practice, so that they can begin to contribute to the field of industrial engineering and to leadership within the profession.
3. To design, improve, and manage integrated systems of people, technology, and materials within the context of societal and contemporary issues in engineering practice.
4. To solve unstructured problems by collecting, modeling, analyzing, and interpreting data within Industrial Engineering practice.
5. To engage in life-long learning, continuing education, and professional growth within the field of Industrial Engineering.

These specific objectives are reinforced by a senior capstone design course in which the student must apply the skills to a comprehensive design problem for an industry setting. This course integrates preceding courses through development of physical systems and organizational characteristics, financial aspects, product analysis, equipment selection, production layout, distribution systems, and overall economic analysis.

The total graduation requirement in industrial engineering is 129 hours. For further information please visit us on the World Wide Web at <http://www.ineg.uark.edu/>.

### Industrial Engineering Eight-Semester Degree Program

The following section contains the list of courses required for the Bachelor of Science in Industrial Engineering degree and a suggested sequence. Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

Students must also take ENGL 2003 during the third year or gain



exemption. At least 3 hours of technical electives must be selected from INEG courses.

Fall Semester Year 1	
4	MATH 2554 Calculus I
3	CHEM 1103 University Chemistry I
4	PHYS 2054 University Physics I
1	GNEG 1111 Introduction to Engineering I
3	ENGL 1013 Composition I
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 1	
4	MATH 2564 Calculus II
4	Freshman Science elective*
3	Humanities/social science elective
1	GNEG 1121 Introduction to Engineering II
3	ENGL 1023 Technical Composition II
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 2	
4	MATH 2574 Calculus III
3	INEG 3413 Engineering Economic Analysis
1	INEG 2101 Principles of Industrial Engineering
3	INEG 3313 Engineering Statistics
4	CSCE 2004 Programming Foundations I
<b>15</b>	<b>Semester hours</b>
Spring Semester Year 2	
4	MATH 3404 Differential Equations
3	INEG 2403 Industrial Cost Analysis
3	Science Requirement**
3	INEG 3333 Industrial Statistics
4	CSCE 2014 Programming Foundations II
<b>17</b>	<b>Semester hours</b>
Fall Semester Year 3	
3	INEG 3713 Methods and Standards
3	INEG 4623 Introduction to Simulation
3	MEEG 2003 Statics
3	ELEG 3903 Electric Circuits and Machines
3	History or Government Requirement: Select one from (HIST 2003, HIST 2013, PLSC 2003)
3	INEG 3513 Manufacturing Design and Processes
<b>18</b>	<b>Semester hours</b>
Spring Semester Year 3	
3	INEG 3613 Introduction to Operations Research
3	INEG 3523 Manufacturing Systems
3	Engineering Science 1: Select one from (MEEG 2303 Introduction to Materials, MEEG 2013 Dynamics, MEEG 3013 Mechanics of Materials)
3	Engineering Science Elective 2: Select one from (CHEG 2133 Fluid Mech., MEEG 2403 Thermo)
3	ECON 2143 Basic Economics
0	ENGL 2003 Advanced Composition or Exemption
<b>15</b>	<b>Semester hours</b>
Fall Semester Year 4	
3	INEG Management Requirement: Select either INEG 4433 Systems Engineering & Management or INEG 4443 Project Management (An upper-level ROTC course may be substituted.)
3	INEG 4543 Materials Handling
3	INEG 4723 Ergonomics
3	Technical elective (please consult approved technical elective list)
6	Humanities/social science electives
<b>18</b>	<b>Semester hours</b>

#### Spring Semester Year 4

4	INEG 4904 I.E. Design
3	INEG 4553 Production Planning/Control
6	Technical electives
3	Humanities/social science elective
<b>16</b>	<b>Semester hours</b>
<b>129</b>	<b>Total hours required</b>

\* CHEM 1123/1121L University Chemistry II or PHYS 2074 University Physics II

\*\* If the student selected CHEM 1123/1121L as their freshman science elective then this course must be PHYS 2074 University Physics II; otherwise see the approved list of IE science electives.

#### Technical Electives

The purpose of technical electives is to provide students with the opportunity to expand their education along lines of particular interest to them. The approved list of technical electives is available in the industrial engineering department. At least three hours must be selected from INEG courses.

#### Humanities/Social Science Electives

Although any elective included on the humanities/social science list may be selected, PSYC 2003 General Psychology is recommended for industrial engineers.

#### Science Electives

The approved list of science electives is available in the industrial engineering departmental office.

SEE PAGE 358 FOR INDUSTRIAL ENGINEERING (INEG) COURSES.

#### MECHANICAL ENGINEERING (MEEG)

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Web: <http://www.meeg.uark.edu/>

- Distinguished Professors Saxena
- Professors Jong, Malshe, Rencis, West
- Associate Professors Couvillion, Gordon, Nutter, Roe, Springer, Tung, Zou
- Assistant Professors Huang, Spearot, Wejinya
- Instructor Davis
- Adjunct Professor Cole
- Adjunct Assistant Professors Batzer, Chaffin, Hamilton, Paulus, Reynolds
- Emeritus Professor Schmidt

The mechanical engineering program is designed to offer a high-quality course of instruction involving classroom, laboratory, and extracurricular activities that results in graduates who are qualified and prepared to meet the demands of a professional career in the present and future work place and be able to assume a responsible place of leadership in a complex technological society.

The mission of the department is three-fold:

- Teaching — To provide a high-quality educational experience for undergraduate and graduate students that enables them to become leaders in their chosen professions.
- Research — To create, explore, and develop innovations in engineering and science through undergraduate and graduate research.
- Service — To provide beneficial service to the local, state, national, and international industries and communities via educational, technical, entrepreneurial, and professional activities.

The courses offered in mechanical engineering provide the student with a broad understanding of fundamental scientific principles that serve as a background for many fields of specialization. The undergraduate curriculum is designed to stress basic engineering principles and to assist in developing creative thinking. Emphasis is placed on the science and art of designing machines and systems, of converting energy into useful forms, and developing a basic understanding of engineering mechanics. The undergraduate program leads to a Bachelor of Science degree in Mechanical Engineering; its educational objectives are to produce graduates who:

1. effectively analyze and design mechanical systems and energy systems;
2. contribute to economic development of Arkansas and the world through the practice of mechanical engineering;
3. meet or exceed the needs and expectations of mechanical engineering employers in industry, government, and private practice;
4. engage in professional activities that promote the mechanical engineering profession and provide continuing self-development, and
5. succeed in graduate study and research, if pursued.

The Bachelor of Science in Mechanical Engineering curriculum includes, in addition to the humanities/social science elective courses, a total of 12 hours of technical and science electives. A student must select these electives with the approval of his or her adviser. It is expected that electives will be chosen to provide a coherent program within one or more areas of specialization or options available to mechanical engineers. Traditional areas of specialization are available in mechanical systems, materials, and energy systems. Other areas include pre-medical, management, and aerospace.

The first-year curriculum is essentially the same as prescribed for all engineering freshmen. The full curriculum follows, with the number of credit hours at the left, preceding course numbers and titles.

### Mechanical Engineering Eight-Semester Degree Program

The following section contains the list of courses required for the Bachelor of Science in Mechanical Engineering degree and a suggested sequence. Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites. Students interested in obtaining a sequencing schedule of courses may contact the Mechanical Engineering office.

Students wishing to follow the eight-semester degree plan should see page 42 in the Academic Regulations chapter for university requirements of the program.

Students must also take ENGL 2003 during the third year or gain exemption. Either the science elective in the second semester of Year 1 or the science elective in the first semester of Year 2 must include PHYS 2074. Other science electives should be chosen from an approved list. See the mechanical engineering office.

Fall Semester Year 1	
3	ENGL 1013 Composition I
3	CHEM 1103 University Chemistry I
4	PHYS 2054 University Physics I
4	MATH 2554 Calculus I
1	GNEG 1111 Introduction to Engineering I
<b>15</b>	<b>Semester Hours</b>
Spring Semester Year 1	
3	Humanities/Social Science Elective (History)
1	GNEG 1121 Introduction to Engineering II
4	MATH 2564 Calculus II
4	Freshman Science Elective (See above)
3	ENGL 1023 Technical Composition II
<b>15</b>	<b>Semester Hours</b>
Fall Semester Year 2	
2	MEEG 2100 Computer-Aided Design Competency
4	Science Elective (See note above)
4	MATH 2574 Calculus III
3	MEEG 2303 Introduction to Materials
3	MEEG 2003 Statics
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 2	
4	MATH 3404 Differential Equations
3	MEEG 2013 Dynamics
3	MEEG 2403 Thermodynamics
3	MEEG 2703 Computer Methods in Mechanical Engineering
3	MEEG 2103 Introduction to Machine Analysis
<b>16</b>	<b>Semester Hours</b>
Fall Semester Year 3	
3	MEEG 3013 Mechanics of Materials
3	MEEG 3113 Machine Dynamics and Control
2	MEEG 3202 Mechanical Engineering Laboratory I
3	MEEG 3503 Mechanics of Fluids
3	ELEG 3903 Circuits & Machines
2	Humanities/Social Science Elective (Economics)
<b>16</b>	<b>Semester Hours</b>
Spring Semester Year 3	
2	MEEG 3212 Mechanical Engineering Laboratory II
3	MEEG 4413 Heat Transfer
4	MEEG 4104 Machine Element Design
3	ELEG 3913 Engineering Electronics
3	Technical/Science Elective
3	Humanities/Social Science Elective (1000-2000 Level) from approved list
<b>18</b>	<b>Semester Hours</b>
Fall Semester Year 4	
2	MEEG 4132 Professional Engineering Practice
1	MEEG 4131 Creative Project Design I
2	MEEG 4202 Mechanical Engineering Laboratory III
3	MEEG 4483 Thermal Systems Analysis and Design
3	Technical/Science Elective
3	Humanities/Social Science Elective (3000 - 4000 Level) from approved list
0	ENGL 2003 Advanced Composition or Exemption
<b>14</b>	<b>Semester Hours</b>
Spring Semester Year 4	
3	MEEG 4133 Creative Project Design II
3	Technical/Science Elective
3	Technical/Science Elective
3	Humanities/Social Science Elective (1000-2000 Level) from approved list
3	Humanities/Social Science Elective (3000- 4000-Level) from approved list
<b>15</b>	<b>Semester Hours</b>
<b>124</b>	<b>Total Hours</b>

**Technical/Science Electives**

The purpose of technical/science electives is to provide students with the opportunity to expand their education along lines of particular interest to them. The approved list of technical/science electives and selected courses for various options is available in the Mechanical Engineering department office.

**Humanities/Social Science Electives**

Students must follow strict guidelines in selecting humanity and social science electives. See mechanical engineering office for details.

SEE PAGE 369 FOR MECHANICAL ENGINEERING (MEEG) COURSES.

# The School of Law

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## **Office of the Dean of the School**

162 Leflar Law Center, 479-575-5601

### **Dean**

Cynthia E. Nance

### **Associate Dean for Academic Affairs**

Lonnie Beard

### **Associate Dean for Students**

James K. Miller

### **Law School Admissions**

479-575-7645

### **National Agricultural Law Center**

479-575-7640, Web site: <http://www.NationalAgLawCenter.org/>

### **World Wide Web**

<http://law.uark.edu/>

## **Teaching Methods**

Legal training teaches principles through discussion and skills through practice. The student must be, by definition, an active participant in that process.

The Socratic “case method” is the basic tool of traditional American legal education. This method involves the study and discussion of litigated cases. The teacher calls upon students to respond in a stimulating question-and-answer dialogue, frequently involving several class members and often including more questions than answers. The learning experience occurs not only in the interchange between teacher and student, but also among the students themselves. This process, applied skillfully by expert teachers and by students possessing a sense of awareness and curiosity, hones the minds of students, develops their respect for facts, and creates a sensitivity to essential differences among issues, policies, reasons, and arguments. Intensive and consistent daily preparation is necessary for students to participate effectively in this process.

In some of the first-year courses, and in many later courses, students are given practical legal problems to solve. These problems may involve drafting legal documents or formulating a course of action for a hypothetical client.

By the time students reach their third year, they will be prepared to engage in significant legal research in selected areas of specialization. A primary source for such experience will be seminars taught informally in small groups by professors who are experts in selected subjects. Frequently, a student will be expected to defend a seminar paper before classmates under circumstances that provide lively and constructive discussion. During the second and third years, students are also permitted to engage in research and writing projects for credit under the supervision and consultation of a selected faculty member, in an area of particular interest to the student.

Of increasing importance in legal education is the role of practical, on-the-job training involving legal problems of actual clients. Legal clinic courses provide valuable client counseling experience, as well as participation in actual trials and appeals under the supervision of a member of the faculty who is also a licensed attorney.

The clinic has offices in the Law Programs Center. Representation is provided for students and indigent local residents. Both civil and certain referred criminal cases are accepted by the clinic.

Many classes in the School of Law involve a significant skills component in which students are placed in a simulated client-based situation and asked to respond appropriately. The curriculum includes a number of specially designated-skills classes that focus on practice skills. All law students are required to take at least one skills class prior to graduation.

## **MISSION AND OBJECTIVES**

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The primary goal of the University of Arkansas School of Law is to prepare lawyers who will render high-quality professional service to their clients, who are interested in and capable of advancing legal progress and reform, and who are prepared to be leaders in their communities. These objectives can best be realized by a competent and dedicated full-time faculty working in partnership with an interested and involved bench and bar. The faculty and administrative staff at the School of Law strive to maintain mutually beneficial relationships with judges and practicing lawyers. Appellate courts regularly schedule cases at the School of Law, and the judges meet with students informally after the arguments. Full-time faculty members teach first-year courses and other required substantive law courses, while practice skill courses such as legal clinic and activities such as moot court and client counseling depend on the assistance of the practicing bar.

The University of Arkansas School of Law also has a strong sense of responsibility to the people of Arkansas. Members of the faculty and student body are active in numerous public service activities. Legal counsel to the indigent is provided through the clinical education program and by special court appointments from time to time. Students and faculty also serve on the bar, in civic and legislative committees, and on task forces. A number of faculty and students contribute time and expertise to state agencies and law reform groups. All of these activities offer students real legal work, serving the people of Arkansas.

## FACILITIES AND RESOURCES

### Robert A. Leflar Law Center

Additions to the Robert A. Leflar Law Center were completed in spring 2008, and the building was dedicated in October 2008. A new addition was opened for students in fall 2006, and faculty and staff moved into new offices in August 2007. The expanded facilities include a new entry hall facing the Arkansas Union and Mullins Library, a two-story lobby, four state-of-the-art classrooms on the third floor, an Arsaga's coffee shop on the second floor, the 203-seat E.J. Ball Courtroom and a new Student Services office. The Richard B. Atkinson Memorial Courtyard, designed by world-renowned artist and sculptor Jesús Morales, was completed in fall 2008.

### Robert A. and Vivian Young Law Library

The Robert A. and Vivian Young Law Library includes more than a quarter million volumes, including cases and statutes from every American jurisdiction. The law library also contains a current and complete collection of legal encyclopedias, digests, tests, treatises, law reviews, reports of administrative agencies, and other government publications.

The Young Law Library is a depository for federal, state, and United Nations documents. It is the only U.N. documents library in the state and one of a few in the Midwest. The library includes a growing collection of agricultural law materials developed with assistance from the National Agricultural Law Center.

Students researching legal problems use traditional printed resources and electronic resources available across the Internet. Portals such as Loislaw.com, LEXIS, WESTLAW, the State of Arkansas Web page, the National Agriculture Law Center Web page, and the Young Law Library's Web page help students identify and use appropriate resources. Computer labs are available for student use. The School of Law also has a wireless network accessible to all students, faculty, and staff.

While primarily designed for the use of Arkansas students, the Young Law Library also serves the research needs of the bench, the bar, and the University community. The Young Law Library provides an attractive and comfortable atmosphere for study and research. Included within the Young Law Library is the Barrett Hamilton Law Library Mezzanine, a particularly attractive study and shelf space area. In addition, the main campus library, Mullins Library, is located near the Young Law Library. The two libraries work closely together to identify, acquire, and share resources throughout the campus.

### Law Faculty

- Vincent Foster University Professor of Legal Ethics and Professional Responsibility Brill
- Wylie H. Davis Distinguished Professor Killenbeck (M.)
- Robert A. Leflar Professor Bailey
- Clayton N. Little Professor Goforth
- E.J. Ball Professor Judges
- Arkansas Bar Foundation Professor Leflar
- Sidney Parker Davis Jr. Professor of Business and Commercial Law Matthews
- William H. Enfield Professor Sheppard
- Professors Beard, Brummer, Flaccus, Kilpatrick, Moberly, Nance, Norvell, Schneider
- Associate Professors Circo, Ewelukwa, Foster, Kelley, Snow
- Assistant Professors Coats, Gallini, Hughes, Killenbeck (A.), Koch, Tarvin
- Research Assistant Professor Pittman
- Visiting Clinical Assistant Professor Doss
- Professor of Law Emeritus Al Witte

## OTHER PROGRAMS

### Joint J.D./M.B.A. Program (Business Administration)

The School of Law and the Sam M. Walton College of Business offer students a juris doctor (J.D.) degree and a master's of business administration (M.B.A.) degree concurrently. Students working to pursue their degrees in this joint program must gain admission to both the School of Law and the Graduate School and be accepted into the program of study leading to the M.B.A. degree. If the student is accepted into both programs, a maximum of six hours of approved upper-level elective law courses may be used as duplicate credit toward the M.B.A. degree and a maximum of six hours of approved graduate courses in business administration may be used as duplicate credit toward the J.D. degree, thus reducing the total time necessary for completion of the degrees.

### Joint J.D./M.P.A. Program (Public Administration)

The department of political science, the Graduate School, and the School of Law cooperate in a dual-degree program that allows a student to pursue a juris doctor (J.D.) degree and a master's of public administration (M.P.A.) degree concurrently. Students must be admitted to the M.P.A. program, the School of Law, and the dual-degree program. If students enter the dual-degree program after enrolling in either the School of Law or the M.P.A. program, they must obtain admission to the other degree program and the dual-degree program during the first year of study.

The School of Law accepts a maximum of nine hours of M.P.A. courses to satisfy requirements for the J.D. degree. To qualify for J.D. credit, the M.P.A. courses must come from a set of core courses and must be approved by the School of Law. For purposes of the M.P.A. degree, 15 hours of elective courses may be taken in the School of Law, provided they are in an area of concentration approved by the director of the M.P.A. program. Students must earn a grade of B or higher in any M.P.A. course offered for credit toward the J.D.

Students admitted to the dual-degree program may commence their studies in either the School of Law or in the M.P.A. program but must complete first year course requirements before taking courses in the other degree program. If they do not maintain the academic or ethical standards of either degree program, students may be terminated from the dual degree program. Students in good standing in one degree program but not the other may be allowed to continue in the program in which they have good standing and must meet the degree requirements of that program. If for any reason a student admitted to the dual degree program does not complete the M.P.A. degree, he or she cannot count any hours of M.P.A. courses toward the J.D. degree. Likewise, M.P.A. students may not be able to count certain law courses if they decide to discontinue their studies in the School of Law. The J.D. degree will be awarded upon completion of all degree requirements; the M.P.A. will be awarded upon completion of the comprehensive examination and the internship (and internship report), or alternately, six hours of additional coursework.

### Joint J.D./M.A. Program

The School of Law and the Department of Political Science provide a dual J.D./M.A. in International Law and Politics. This program's students must be admitted both to the School of Law and the Graduate School in the Department of Political Science.

A maximum of 12 hours of approved, upper-level elective law courses may be used as credit toward the M.A. and a maximum of nine hours of approved graduate courses in political science may be used as credit toward the J.D. degree, reducing the time necessary to complete both degrees by about one academic year. The M.A. program offers a six-hour thesis or a paid, six-month internship option designed to prepare students for a career in international politics or law.

The 12 hours of M.A. courses taken in the School of Law must relate to the study of international law and be approved by the student's M.A. adviser and the Law School's Associate Dean of Academic Affairs. The nine hours of approved graduate courses in political science may include: Comparative Political Analysis; Seminar in International Politics; Seminar in Contemporary Problems; International Political Economy; and International Trade Policy. Other political science and graduate-level courses may be taken by permission. Paid internship credits cannot be applied toward the juris doctorate.

## SCHOOL ADMISSION REQUIREMENTS

For complete details concerning admission to the School of Law, visit us at <http://law.uark.edu/admissions.php> or write to School of Law Office of Admissions, Leflar Law Center, University of Arkansas, Fayetteville, AR 72701, or telephone 479-575-7645 for a University of Arkansas School of Law Catalog of Studies or download a Catalog at <http://law.uark.edu>.

### General Information

Except for students in the "3/3 Programs," applicants must have completed all requirements for a bachelor's degree from an accredited institution prior to enrolling in the School of Law. All applicants must take the Law School Admission Test (LSAT) administered by Law School Admission Services.

Admission of most students is based on applicants' undergraduate grade-point averages and LSAT test scores. However, the School of Law also seeks a diverse student body with a broad set of backgrounds, interests, life experiences, perspectives, qualifications, and career objectives. In selecting a small percentage of applicants, therefore, the admissions committee may consider a number of factors relevant to a determination of how the applicant might contribute to such diversity within the School of Law.

There is no predetermined satisfactory grade-point average or law school admission test score. Admission is on a selective basis.

While admissions personnel are happy to answer any questions that applicants may have, the interview as a device for the applicant to "sell" themselves is not a part of the admissions process. The admissions committee works only with the written materials in an applicant's file.

### LSAT

The Law School Admission Test (LSAT) is given four times a year in Fayetteville and at other locations throughout Arkansas and in other states. Arrangements may be made online at <http://lsac.org> or by writing to Law School Admission Council, 662 Penn Street, Box 2000, Newtown, PA 18940-0998. Applicants for admission are urged to take the test at least nine months prior to expected entrance to law school.

### LSDAS

The University of Arkansas participates in the Law School Data Assembly Service (LSDAS). The LSAT/LSDAS registration packet may be obtained online at <http://www.lsac.org> or by writing directly to Law School Admission Council, 662 Penn St., Box 2000, Newtown, PA 18940-0998. The packet includes instructions for providing transcripts of scholastic work for analysis by the LSDAS. The applicant should see that the LSAT score and LSDAS reports are sent to this school.

### Pre-Law Study

No pre-law curriculum is prescribed at the University of Arkansas School of Law or at any other American law school. Experience has shown that students do equally well in law school and in law practice regardless of their differing educational backgrounds. As a result, no single "pre-law major" is required or

even recommended. Students in a position to structure their college curricula should select courses that emphasize analytical and problem-solving skills and courses in which written work is vigorously edited. Arkansas admits applicants from a wide variety of college majors. The resulting diversity enhances and enriches the educational experience of all students.

### The Admission Process

The University of Arkansas School of Law admits one beginning class in August of each year. Applications for admission may be completed online at <http://law.uark.edu> or can be obtained from the Office of Admissions, University of Arkansas School of Law, Leflar Law Center, Fayetteville, AR 72701.

Applications should be completed as early as possible. While applications are considered as long as there are openings in the entering class, few applications arriving after April 1 receive favorable action.

The admission process at Arkansas is a continuing one. As test reports and scores are received, admission decisions are made. It is impossible to give a final decision on some applicants until late spring.

An applicant whose admission has been approved will receive a tentative admission notice. The applicant will be required to deposit a \$75 pre-registration fee. This fee is non-refundable but is applied to the regular registration fee when the student registers.

### Other Admission Information

Persons who have attended other law schools should not follow the above procedure but should apply to the Associate Dean for Students at the School of Law as a transfer student, indicating previous attendance at another school. Failure to indicate such attendance will automatically void a tentative admission granted to such person.

A student may not register in the School of Law for any course without first complying with all admission requirements for regular law students. Undergraduate students not currently admitted to the School of Law may enroll for a course with special permission, but the credits will not count toward a J.D. degree.

### Transfer Students

A law student who has received a degree from an approved college and thereafter has completed work with satisfactory scholarship in a law school accredited by the American Bar Association is eligible to be considered for transfer to the University of Arkansas School of Law. The amount of transfer credit to be granted will depend upon the quality of performance and the relation of completed courses to the program of this school. Only credits or units (not grades) are transferable in any case, and even credits will not be accepted for any course or other work in which a grade below 2.0 or the equivalent has been given from the other law school. To qualify for a degree, the student must comply with the American Bar Association's residency requirements, which require attendance at this Law School for at least 60 credit hours.

Failure to disclose attendance at another college or law school, expulsion, suspension, academic or other probation, or any pending matters relating to misconduct or dishonesty at another school is sufficient grounds to require withdrawal.

### Visiting Students

A student in good standing at another fully accredited law school may apply for admission as a visiting student. Enrollment restrictions may limit class selection, and visiting students are not eligible to receive degrees from the School of Law.

### 3/3 Programs

The School of Law and the J. William Fulbright College of Arts and Sciences have collaborated in developing a program that will enable outstanding students to enter the School of Law after their third year of undergraduate studies. A student enrolled in the Fulbright College is eligible to begin study in the UA School of Law after the completion of at least 94 hours of college work if the following criteria are met:

1. Completion of all University, college, and major course requirements for their undergraduate degrees;
2. A cumulative grade-point average of at least 3.50; and
3. A score of at least 159 on the LSAT.

Such students will receive a Bachelor of Arts or a Bachelor of Science after the completion of sufficient hours at the School of Law in order to meet the regular requirements of Fulbright College. These students will then receive a juris doctor (J.D.) degree after completing the required number of hours at the School of Law.

In addition to the 3/3 program with the J. William Fulbright College of Arts and Sciences, the School of Law has a similar program with the department of agricultural economics and agribusiness in the Dale Bumpers College of Agricultural, Food, and Life Sciences. Exceptional students may enroll in the Law School in their fourth year of undergraduate study. Students will be required to have (1) completed at least 95 credit hours in the pre-law program, (2) a cumulative grade-point average in all college or University course work of at least 3.50 without grade renewal, and (3) an LSAT score of at least 159. The B.S.A. Agricultural Business degree will be granted after successfully completing 29 credit hours from the first-year School of Law course work.

It is a requirement of the School of Law's accreditation standards that no student be admitted to the University of Arkansas School of Law until they have completed at least three-fourths of the work necessary for the baccalaureate degree. The requirements embodied in these 3/3 programs satisfy this requirement.

### COLLEGE SCHOLARSHIPS

Students are expected to make sufficient financial arrangements for the first year of study without the necessity of seeking employment. All law students are required to be full-time students, and no law student is permitted more than 20 hours per week of employment. First-year students are strongly discouraged from working while enrolled in classes. First-year students are expected to adhere to a standard curriculum; some courses in the upper-division curriculum are also required.

Applications for financial aid may be obtained from the Office of Financial Aid, University of Arkansas, Hunt Hall 114, Fayetteville, AR 72701, 479-575-3806. You may also find more information about financial aid opportunities online at <http://www.uark.edu/admin/fininfo/index.html>. Applications for financial aid must be submitted to the Office of Financial Aid by April 1. Specific fees and costs are listed in the School of Law Catalog.

### DEGREE REQUIREMENTS

For course information and degree requirements, see the School of Law Catalog online at <http://law.uark.edu> or by writing or calling the University of Arkansas School of Law, Leflar Law Center, Waterman Hall 147, Fayetteville, AR 72701, 479-575-7645.

### GRADUATE STUDIES

The University of Arkansas School of Law is a professional degree program. In addition to the law degree, the Law School offers a graduate degree in agricultural law. The Graduate Program in Agricultural Law at the University of Arkansas is the only program in the United States that offers a Master of Laws (LL.M.) degree in agricultural law. Students enrolled in this unique and selective program have the opportunity for advanced study, creative research, and specialized professional training in the legal issues involved with agricultural production, marketing, and distribution. Graduates of the program are among the leaders of today's agricultural law community, working in private practice, government, agribusiness, public policy, and academia. For more information, visit [http://law.uark.edu/llm\\_program.php](http://law.uark.edu/llm_program.php) or e-mail the graduate program at [llm@uark.edu](mailto:llm@uark.edu).

### ACCREDITATIONS

The degree programs in the School of Law on the Fayetteville campus are accredited by both the American Bar Association and the Association of American Law Schools.

# Reserve Officer Training Corps

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## **Air Force ROTC**

319 Memorial Hall, 479-575-3651/3652, E-mail: rotc030@uark.edu

### **Professor of Aerospace Studies**

Colonel Mark Clark

### **World Wide Web**

<http://www.uark.edu/~afrotc/>

## **Army ROTC**

207 Army ROTC Building, 479-575-4251/5853,

Toll Free: 1-866-891-5538, Fax: 479-575-5855

E-mail: armyrotc@cavern.uark.edu

### **Professor of Military Science and Leadership**

Lieutenant Colonel Clark B. Taylor

### **World Wide Web**

<http://www.uark.edu/armyhog/>

The Reserve Officer Training Corps (ROTC) programs at the University of Arkansas provide physical and mental challenges that are not offered anywhere else on campus. The ROTC programs prepare young men and women for careers as professional military officers. In addition to academic studies, each service requires that all students attend a weekly leadership laboratory.

The freshman and sophomore courses are electives offered to male and female students who may earn four hours of academic credit in Aerospace Studies or up to six hours in Military Science. Absolutely no military obligation is incurred by non-scholarship students as a result of their enrollment in or completion of any or all of their freshman or sophomore ROTC courses.

## **U.S. AIR FORCE ROTC**

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In addition to the first two years of academic study (see above), the University, in cooperation with the U.S. Air Force, offers two years of advanced instruction in Aerospace Studies. The advanced instruction prepares students for the responsibilities and privileges of a commissioned officer. This advanced instruction offers three hours of academic credit per semester for Air Force cadets.

Air Force ROTC (AFROTC) cadets must attend and successfully complete field training. AFROTC cadets usually attend field training between their sophomore and junior years. Air Force ROTC cadets may volunteer to attend various professional development courses during their non-field-training summers.

Each student must successfully complete the summer field training to qualify for the advanced ROTC program. All veterans who have completed

basic training and 180 days of service with any component of the U.S. Armed Forces are exempt from the freshman AFROTC course.

Financial assistance is also available in the form of monthly stipends for cadets officially enrolled in the advanced training program, who have successfully completed summer field training. Additionally, Air Force ROTC offers four-, three-, and two-year scholarships to competitively selected students. All scholarship students receive a monthly tax-free allowance ranging from \$300 to \$450, payment of tuition expenses, textbook payment, and payment of certain other fees. Additional information and applications for this assistance may be obtained on the Web at <http://www.afrotc.com/>.

A student who successfully completes the Advanced Course in Air Force ROTC and receives a degree will be awarded a commission and will serve on active duty in the U. S. Air Force.

All textbooks, instructional material, and equipment required for ROTC courses are furnished at no cost to the student.

SEE PAGE 311 FOR U.S. AIR FORCE ROTC (AERO) COURSES

## **U.S. ARMY ROTC**

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In addition to the first two years of academic study, the University, in cooperation with the U.S. Army, offers two years of advanced instruction in Military Science, Leadership, Ethics, and Personal Confidence. The advanced instruction prepares students for the responsibilities and privileges of a commissioned officer. This advanced instruction offers four hours of academic credit per semester for Army cadets. Additionally, all students enrolled in the final two years of ROTC receive a monthly tax-free allowance ranging from \$450 to \$500.

Army ROTC cadets attend a paid 31-day Leadership Development and Assessment Course (LDAC) between their junior and senior school years. Cadets may attend professional development training such as Leadership Internships, Airborne, Air Assault, British Exchange program, Northern Warfare, Nurse Summer Training Program, Mountain Warfare and Cultural Immersion Overseas Program in the summer during the sophomore year. During summer field training, cadets receive room and board.

For students having a minimum of two academic years in school remaining (undergraduate, graduate, or a combination of the two), an alternate two-year program is offered. Students entering the two-year ROTC program attend a 28-day Leaders Training Course (LTC) during the summer. Students who attend LTC and are otherwise qualified are eligible for two-year scholarships. Rising juniors, seniors and graduate students who meet the U.S. Army Cadet Command's Scholar-Athlete-Leader criteria and are unable to attend the LTC may elect to participate in the Accelerated Cadet Commissioning Training (ACCT) program conducted on the UA campus.



Students with high school-level military schooling (ROTC, NDCC, or Military Academy) may qualify for the advanced ROTC program without completing the freshman or sophomore courses. All veterans who have completed basic training and 180 days of service with any component of the U.S. Armed Forces can receive full credit for the freshman and sophomore courses and may enter ROTC at the advanced level, once junior academic standing has been achieved.

Financial assistance is also available to qualified students enrolled in ROTC courses. The Army offers two, two-and-one-half, three, three-and-one-half, and four-year scholarships. Freshman or sophomore students who are not enrolled in Army ROTC may qualify for on-campus two or three-year scholarships. Juniors, seniors, and graduate students who have at least two full years of college remaining may also qualify for on-campus two or three-year scholarships. Scholarships can be used to pay for graduate school. Scholarship students receive a monthly tax-free allowance ranging from \$300 to \$500, payment of all tuition expenses, textbook payment (\$1,200 per year), and payment of certain other fees. Additionally, some qualified three- and four-year scholarship winners may receive free room and board, provided they meet the University of Arkansas requirements for the Room and Board Scholarship.

Army ROTC scholarship and advanced course students must agree to successfully complete at least one semester of American military history, LDAC, and a Staff Ride (Terrain Walk) prior to commissioning. Depending on the degree plan, Army ROTC may count from zero to 19 hours of elective credits for undergraduate students.

Army ROTC also offers a unique financial assistance program available to all non-scholarship Army ROTC Advanced Course students through the Simultaneous Membership Program (SMP). This program allows students with 27 or more hours to be enrolled in Army ROTC while simultaneously serving with an Army Reserve or Army National Guard unit. Financial benefits of this program presently provide approximately \$600 to \$1,700 per month to enrolled students. Prior Service National Guard and Army Reserve students may also qualify for the Montgomery G.I. Bill, MGIB Kicker, the Veterans Administration Workstudy Program, Federal Tuition Assistance, and/or the Arkansas Army National Guard Tuition Assistance Program. Army ROTC Scholarship Nurse Cadets may also receive reimbursement for expenses related to Nursing Uniforms, Immunizations, Clinical Fees, Nursing Malpractice Insurance and the NCLX-RN review and testing.

A student who successfully completes the Advanced Course in the Army ROTC program and receives a degree may be accepted for a regular or reserve commission in one of the sixteen branches of the Army.

All textbooks, instructional material, and equipment required for ROTC courses are furnished at no cost to students.

SEE PAGE 371 FOR U.S. ARMY ROTC (MILS) COURSES

# University Faculty

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The first date after the listing of each name indicates the year of first appointment at the University; the second date indicates the year of appointment to present faculty rank. Where they coincide, only one date is given.

- Ackerson, Michael Dean** – B.S.Ch.E., M.S.Ch.E. (University of Missouri-Rolla), Ph.D. (University of Arkansas), P.E., Associate Professor of Chemical Engineering, 1988, 1992.
- Adams, Charles H.** – B.A. (Tulane University of Louisiana), M.A., Ph.D. (University of Virginia), Professor of English, 1986, 2006.
- Adams, Douglas J.** – B.A. (Augsburg College), M.A., Ph.D., (University of Arizona), Associate Professor of Sociology, 1995, 2002.
- Adams, Paul** – B.S. (Louisiana State University), Ph.D. (Case Western Reserve University), Assistant Professor of Chemistry and Biochemistry, 2007.
- Adkins, Charles W. Jr.** – B.S. (University of Central Arkansas), L.E. (U.S. Army Logistics Management College), Major (U.S. Army, Quartermaster Corps), Assistant Professor of Military Science and Leadership, 2001.
- Adler, Jacob** – A.B., Ph.D. (Harvard University), Associate Professor of Philosophy, 1984, 1991.
- Agana, Carol E.** – B.S.E. (University of Arkansas), M.N.Sc. (University of Arkansas for Medical Sciences), Instructor of Nursing, 1998, 2000.
- Ahrendsen, Bruce L.** – B.S. (Iowa State University), M.Econ., Ph.D. (North Carolina State University), Professor of Agricultural Economics and Agribusiness, 1990, 2006.
- Akeroyd, John R.** – B.A. (University of Louisville), M.A., Ph.D. (Indiana University), Professor of Mathematical Sciences, 1986, 1999.
- Alexander, Jerry W.** – B.A. (Western Kentucky University), M.A. (Texas Tech University), Visiting Assistant Professor of Operations Management, 2002.
- Allen, Carolyn Henderson** – B.S. (Alabama State University), M.S. (Clark Atlanta University), Professor and Dean of University Libraries, 2000.
- Allen, Bruce** – B.A., M.S.W. (University of Houston), Clinical Assistant Professor of Social Work, 2005, 2006.
- Allen, Myria W.** – B.A., M.A., Ph.D. (University of Kentucky), Associate Professor of Communication, 1993, 1999.
- Allison, Neil T.** – B.S. (Georgia College), Ph.D. (University of Florida), Associate Professor of Chemistry and Biochemistry, 1980, 1985.
- Aloysius, John A.** – B.S. (University of Colombo, Sri Lanka) Ph.D. (Temple University), Associate Professor of Information Systems, 1995, 2002.
- Amason, Patricia** – B.S.E. (University of Arkansas), M.A. (University of Kentucky), Ph.D. (Purdue University), Associate Professor of Communication, 1994, 2000.
- Anand, Vikas** – M.Sc. (Birla Institute of Technology), M.B.A. (Indian Institute of Foreign Trade), Ph.D. (Arizona State University), Associate Professor of Management, 1999, 2005.
- Anders, Merle M.** – B.S. (Iowa State University of Science and Technology), M.S., Ph.D. (University of Hawaii), Research Assistant Professor of Rice Cropping Systems, 1998.
- Andersen, Craig R.** – B.S. (Augustana College), M.S., Ph.D. (University of Minnesota), Associate Professor of Horticulture, 1985, 1995.
- Andrews, David L.** – B.S.E.E., M.S.E.E. (University of Missouri-Columbia), Ph.D. (Syracuse University), Thomas Mullins Chair and Professor of Computer Science and Computer Engineering, 2008.
- Ang, Simon S.** – B.S.E.E. (University of Arkansas), M.S.E.E. (Georgia Institute of Technology), Ph.D. (Southern Methodist University), P.E., Professor of Electrical Engineering, 1988, 1995; Adjunct Professor of Biological and Agricultural Engineering, 2003.
- Anthony, Nicholas B.** – B.S., M.S. (Ohio State University), Ph.D. (Virginia Polytechnic Institute and State University), Professor of Poultry Science, 1987, 2000.
- Antoine, Pierre Ph.** – B.S. (University of Louvain, Belgium), Ph.D. (University of Minnesota), Adjunct Professor of Agronomy, 1987.
- Apon, Amy W.** – B.S.Ed., M.A., M.S. (University of Missouri-Columbia), Ph.D. (Vanderbilt University), Professor of Computer Science and Computer Engineering, 1998, 2007.
- Apple, Jason K.** – B.S. (Oklahoma State University), M.S., Ph.D. (Kansas State University), Professor of Animal Science, 1995, 2007.
- Apple, Laurie M.** – B.S., M.S. (University of Arkansas), Ph.D. (Oklahoma State University), Associate Professor of Human Environmental Sciences, 2000, 2008.
- Arenberg, Nancy** – B.A. (Grinnell College), M.A. (University of Illinois, Champaign-Urbana), Ph.D. (University of Arizona, Tucson), Associate Professor of Foreign Languages, 1996, 2002.
- Armstrong, Edward P.** – B.A. (Indiana University), M.A., Ph.D. (Pennsylvania State University), Assistant Professor of English, 1997.
- Arnold, Mark E.** – B.S., Ph.D. (Northern Illinois University), Associate Professor of Mathematical Sciences, 1993, 1999.
- Arrington, Andrea L.** – B.A. (Knox College), M.A., Ph.D. (Emory University), Assistant Professor of History, 2007.
- Ashton, Dub** – B.S.B.A., M.B.A. (Memphis State University), Ph.D. (University of Georgia), Associate Professor of Marketing and Logistics, 1981.
- Aslin, Larry** – B.A., M.A. (University of Missouri-Columbus), Research Associate Professor of Communication Disorders, 1975, 1988.
- Awika, Joseph** – B.S. (Egerton University, Kenya), M.S., Ph.D. (Texas A&M University) Adjunct Assistant Professor of Food Science, 2005.
- Babcock, Robert E.** – B.S.Pet.E., M.Ch.E., Ph.D. (University of Oklahoma), P.E., Professor of Chemical Engineering, 1965, 1974.
- Bacon, Robert K.** – B.S.A., M.S. (University of Arkansas), Ph.D. (Purdue University), Professor of Crop, Soil, and Environmental Sciences, 1984, 1993.
- Bailey, Alberta S.** – B.A. (Miles College), M.S.L.S. (Case Western Reserve University), Professor and Librarian, 1979, 1989.
- Bailey, Carlton** – B.A. (Talladega College), J.D. (University of Chicago), Ben J. Altheimer Professor of Law, 1978, 2005.
- Bailey, William C.** – B.A., M.A., Ph.D. (Texas Tech University), Associate Professor of Human Environmental Sciences, 1991, 1997.
- Bajwa, Sreekala G.** – B.S., Ag.E. (Kerala Agriculture University, Tavanur, India), M.S. Ag.E. (Indian Institute of Technology, Kharagpur, India), Ph.D. (University of Illinois), Associate Professor of Biological and Agricultural Engineering, 2001, 2007.

- Baker, Darlene Z.** – B.S., M.S. (University of Arkansas), Ph.D. (Texas Woman's University), Adjunct Professor of Agricultural and Extension Education, 2001.
- Balda, Juan C.** – B.Sc.E.E. (Universidad Nacional del Sur), Ph.D. (University of Natal), P.E., Professor of Electrical Engineering, 1989, 1999.
- Baker, Lindlee** – A.B. (Georgetown University), M.Sc. (London School of Economics and Political Science), J.D. (University of Arkansas), Clinical Associate Professor of Law, 1994, 2002.
- Baker, Kim** – B.S., M.S. (University of Arkansas), Ph.D. (University of South Carolina), Assistant Professor of Communication Disorders, 2007.
- Baldwin, Vernoice G.** – B.S., M.S. (University of Arkansas), Director of Nursery School and Infant Development Center for the School of Human Environmental Sciences, 1996.
- Balog, Janice M.** – B.S. (Purdue University), M.S. (University of Rhode Island), Ph.D. (Purdue University), Research Assistant Professor of Poultry Science, 1992, 1998.
- Bamberger, Uta** – M.A. (University of California, Santa Barbara), Ph.D. (University of Massachusetts), Assistant Professor of Foreign Languages, 1997.
- Barham, Brett** – B.S., M.S., Ph.D. (Texas Tech University), Assistant Professor of Animal Science, 2005.
- Barnes, Jeffery K.** – B.S. (University of Rochester), M.S., Ph.D. (Cornell University), Curator in Entomology, 2002.
- Barta, Kathleen M.** – B.S. (Marquette University), M.S. (Boston College), Ed.D. (University of Arkansas), Associate Professor of Nursing, 1984, 1998.
- Batzler, Stephen A.** – B.S. (Michigan Technological University), M.S. (GMI Engineering and Management Institute), Ph.D. (Michigan Technological University), P.E., Adjunct Assistant Professor of Mechanical Engineering, 2004.
- Beard, Lonnie R.** – B.A. (Arkansas State University), J.D. (University of Arkansas), LL.M. (New York University), Professor of Law, 1983, 1991.
- Beaupre, Steven J.** – B.S., M.S. (University of Wisconsin), Ph.D. (University of Pennsylvania), Professor of Biological Sciences, 1995, 2006.
- Beavers, Gordon** – B.S., M.S. (University of Texas), Ph.D. (Indiana University), Associate Professor of Computer Science and Computer Engineering, 2002.
- Beck, Jules** – B.A., M.S., Ph.D. (University of Minnesota), Assistant Professor of Workforce Development, 2005.
- Beck, Paul** – B.S., M.S. (Oklahoma State), Ph.D. (University of Arkansas), Associate Professor of Animal Science, 2004, 2008.
- Behrend, Douglas A.** – B.A. (Kalamazoo College), Ph.D. (University of Minnesota), Professor of Psychology, 1989, 2009.
- Beike, Denise R.** – B.A., Ph.D. (Indiana University), Associate Professor of Psychology, 1995, 2000.
- Beitle, Robert R.** – B.S.Ch.E., M.S.Ch.E., Ph.D. (University of Pittsburgh), P.E., Professor of Chemical Engineering, Adjunct Associate Professor of Biological and Agricultural Engineering, 1993, 2006.
- Bell, Karmen V.** – B.A. (Indiana Wesleyan University), M.Ed. (Texas A&M University), Clinical Instructor of Elementary Education, 2007.
- Bell, Steven M.** – B.A. (University of Kansas), M.A. (University of Kentucky), Ph.D. (University of Kansas), Associate Professor of Foreign Languages, 1992, 1996.
- Bellaiche, Laurent** – B.S., M.S., Ph.D. (University of Paris VI, France), Professor of Physics, 1999, 2005.
- Benamon, Johnny C.** – M.S., M.P.A. (University of Mississippi), Visiting Assistant Professor of Operations Management, 2000.
- Bennett, A. Rick** – B.S. (Shippensburg State University), M.S. (Colorado State University), Ph.D. (West Virginia University), Professor of Plant Pathology, 2009.
- Benton, Gregory M.** – B.A. (University of California-Santa Barbara), M.S. (Indiana University), Ph.D. (Indiana University), Assistant Professor of Recreation, 2007.
- Bernhard-Jackson, Emily A.** – B.A. (University of Iowa), M.A. (Boston College), Ph.D. (Brandeis University), Assistant Professor of English, 2005.
- Bernhardt, John L.** – B.S., M.S. (East Caroline University), Ph.D. (Clemson University), Research Assistant Professor of Entomology, 1979.
- Berthelot, Ronald J.** – B.S. (Southeastern Louisiana University), M.S., Ed.D. (University of Tennessee), Visiting Assistant Professor of Operations Management, 1993.
- Biggs, Bobbie T.** – B.S.H.E., M.S. (University of Arkansas), Ph.D. (Texas A&M University), Professor of Workforce Development, 1979, 2000.
- Billings, Sabrina** – B.A. (University of Kentucky), Ph.D. (University of Chicago), Assistant Professor of Foreign Languages, 2007.
- Blackwell, Marlon M.** – B.Arch (Auburn University), M.Arch (Syracuse University), Professor of Architecture, 1992, 2002.
- Bluhm, Burton** – B.S. (University of Oklahoma), M.S., Ph.D. (Purdue University), Assistant Professor of Plant Pathology, 2008.
- Bonacci, Jeffrey A.** – B.S. (University of Akron), M.S. (West Virginia University), D.A. (Middle Tennessee State University), Clinical Assistant Professor of Kinesiology, 2000.
- Bonanno, F. Ramon** – B.S. (U.S. Military Academy), M.S. (Iowa State University), Ph.D. (University of Arizona), Visiting Assistant Professor of Operations Management, 1994.
- Booker, M. Keith** – B.A. (Vanderbilt University), M.S., M.A. (University of Tennessee), Ph.D. (University of Florida), Professor of English, 1990, 1997.
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- Thompson, Dale E.** – B.S., M.Ed. (University of Arkansas), Ph.D. (Pennsylvania State University), Associate Professor of Workforce Development, 1987, 2004.
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- Thompson, Lynne** – B.S. (Kansas State University), M.S., Ph.D. (University of Minnesota), Adjunct Professor of Entomology, 1992.
- Thompson, Randall J.** – B.A. (Indiana University), M.L.S. (Indiana University), J.D. (University of Illinois), Associate Professor of Law, 2008.
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- Tjani, Maria** – B.S. (University of Ioannina, Greece), M.S. (Purdue University), Ph.D. (Michigan State University), Assistant Professor of Mathematical Sciences, 1996, 2008.
- Ton, Gary M.** – B.S. (University of Mississippi), M.S. (University of Arkansas), Visiting Assistant Professor of Operations Management, 2000.
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- Turner, Lori W.** – B.S. (Florida State University), M.S. (Florida International University), M.S. (Florida State University), Ph.D. (University of Alabama), Associate Professor of Health Science, 1997, 2002.
- Turner, M. Jean** – B.S. (Weber State College), M.S., Ph.D. (Texas Tech University), Professor of Human Environmental Sciences, 1991, 2006.
- Turner, Ronna** – B.S., M.S. (Southwest Missouri State), Ph.D. (University of Illinois), Associate Professor of Educational Foundations, 1998, 2003.
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- VanDevender, Karl** – B.S., M.S. (Mississippi State University), Ph.D. (University of Arkansas), Professor of Biological and Agricultural Engineering, 1995, 2004.
- Vann, Stephen R.** – B.S., M.S. (Mississippi State University), Ph.D. (Texas A&M University), Assistant Professor of Plant Pathology, 2002, 2003.
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- Verma, Lalit R.** – B. Tech. (J.N. Agricultural University, Jabalpur, India), M.S. (Montana State University), Ph.D. (University of Nebraska), P.E., Professor of Biological and Agricultural Engineering, 2000.
- Vicic, David A.** – B.A. (Johns Hopkins University), M.S., Ph.D. (University of Rochester), Associate Professor of Chemistry, 2002, 2007.
- Vickers, Kenneth** – B.S., M.S. (University of Arkansas), Research Professor of Physics, 1998.
- Villalobos, Sergio** – B.A. (Universidad ARCIS-Chile), M.A., Ph.D. (University of Pittsburgh), Assistant Professor of Foreign Languages, 2005.
- Viswaneth, Vinkatesh** – B.E. (Bharathiar University, India), Ph.D. (University of Minnesota), Professor and the George and Boyce Billingsley Endowed Chair in Information Systems, 2004.
- Vitale, Davide** – Diploma in Architecture (University of Rome), M.Arch. (Harvard Graduate School of Design), Professor of Architecture, 1985, 1997.
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- Wailles, Eric J.** – B.S. (Cornell University), Ph.D. (Michigan State University), Professor of Agricultural Economics and Agribusiness; L.C. Carter Endowed Chair in Rice and Soybeans, 1980, 2002.
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- Walker, James M.** – B.S., M.S. (Louisiana Polytechnic Institute), Ph.D. (University of Colorado), Professor of Biological Sciences, 1965, 1976.
- Walker, Mary A.** – B.A. (University of Arkansas), M.L.S. (University of North Texas), Assistant Professor and Assistant Librarian, 2001.
- Wall, Jerry D.** – B. of Arch.Engr. (Oklahoma State University), S.M. (Massachusetts Institute of Technology), Ph.D. (University of Arkansas), Professor of Architecture, 1973, 1979.
- Wallack, Catherine J.** – B.A. (Rice University), M.A. (Harvard University), Assistant Professor of Interior Design, 2004.
- Waller, Matthew** – B.S. (University of Missouri – Columbia), M.S., Ph.D. (Pennsylvania State University), Professor of Marketing and Logistics and the Garrison Endowed Chair in Supply Chain Management, 2002, 2006.
- Wang, Kelvin C.P.** – B.S. (Southwestern Jiao Tong University), M.S. (Northern Jiao Tong University), Ph.D. (Arizona State University), P.E., Professor of Civil Engineering, 1993, 2002.
- Wang, Ya-Jane** – B.S. (National Taiwan University), M.S. (University of Minnesota-Twin Cities), Ph.D. (Iowa State University), Associate Professor of Food Science, 1999, 2004.
- Ward, Barry M.** – B.A.Mod., M.Sc. (Trinity College, Dublin), Ph.D. (Rutgers University), Assistant Professor of Philosophy, 2002.
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- Wardlow, George W.** – B.S., M.Ed. (University of Missouri), Ph.D. (Ohio State University), Professor of Agricultural and Extension Education, 1992, 1998.
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- Watkins, Bradley** – B.S., M.S. (University of Arkansas), Ph.D. (Oklahoma State University), Research Assistant Professor of Agricultural Economics, 2002.
- Watkins, Patsy** – B.A., M.A. (University of Texas, Austin), Ph.D. (University of Iowa), Associate Professor of Journalism, 1984, 1992.
- Watkins, Susan E.** – B.S.E., M.S., Ph.D. (University of Arkansas), Research Associate Professor and Extension Specialist of Poultry Science, 1996, 2000.
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- Webb, Jennifer D.** – B.S., M.S. (University of Tennessee), Ph.D. (Oklahoma State University), Associate Professor of Interior Design, 1999, 2005.
- Webb, Lynne M.** – B.S. (Pennsylvania State University), M.S., Ph.D. (University of Oregon), Professor of Communication, 1999.
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- Wicks, Robert H.** – B.A. (American University), M.A. (University of Missouri-Columbia), Ph.D. (Michigan State University), Professor of Communication, 1994, 2006.
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- Wiedenmann, Robert** – B.S., Ph.D. (Purdue University), Professor of Entomology, 2005.
- Wilke, Stephen B.** – B.S. (Middle Tennessee State University), J.D., M.P.A. (University of Memphis), Visiting Assistant Professor of Operations Management, 1996.
- Wilkins, Charles L.** – B.S. (Chapman College), Ph.D. (University of Oregon), Distinguished Professor of Chemistry and Biochemistry, 1998.
- Williams, Brent** – B.A. (Austin College), M.S. (University of Texas Southwestern Medical Center - Dallas), Ph.D. (University of Illinois at Urbana-Champaign), Assistant Professor of Rehabilitation Education, 2002.
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- Wissehr, Catherine** – B.S., M.S.N.Ed. (Southeast Missouri State University), Ph.D. (University of Missouri-Columbia), Assistant Professor of Curriculum and Instruction, 2009.
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- Wolf, Patrick J.** – B.A. (University of St. Thomas), A.M., Ph.D. (Harvard University), Professor and Endowed Chair in School Choice, 2006.
- Wolpert, Rembrandt Gerhard Franz** – M.A. (University of Munchen), Ph.D. (University of Cambridge), Professor of Music, 2000.
- Woodland, Janet C.** – B.A. (King's College, Wilkes-Barre, Penn.), M.A., Ph.D. (State University of New York at Stony Brook), Clinical Assistant Professor of Mathematical Sciences, 1993, 2009.
- Woods, Randall B.** – B.A., M.A., Ph.D. (University of Texas), John A. Cooper, Sr. Distinguished Professor of Diplomacy in the Fulbright Institute of International Relations, 1971, 1995.
- Wooley, Jerry** – B.A., M.S. (University of Arkansas), Extension Specialist, 1977.
- Worden, Steven K.** – B.S., M.A. (Portland State University), Ph.D. (University of Texas, Austin), Associate Professor of Sociology, 1987, 1993.
- Worrell, Dan** – B.S., M.S., Ph.D. (Louisiana State University), Professor of Management and Sam M. Walton Leadership Chair, 2005.

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- Wu, Jingxian** – B.S. (Beijing University of Aeronautics and Astronautics), M.S. (Tsinghua University), Ph.D. (University of Missouri-Columbia), Assistant Professor of Electrical Engineering, 2008.
- Xiao, Min** – B.S. (Nanjing University), Ph.D. (University of Texas), Distinguished Professor of Physics, 1990, 2004.
- Xie, Jining** – B.E. (Tsinghua University), Ph.D. (Pennsylvania State University), Assistant Professor of Electrical Engineering, 2005.
- Yang, Song** – B.A. (Branch College of Nankai, China), M.A. (Nankai University, China), Ph.D. (University of Minnesota), Associate Professor of Sociology, 2002, 2008.
- Yazwinski, Thomas Anthony** – B.S. (University of Vermont), M.S. (University of Maine), Ph.D. (North Carolina State University), University Professor of Animal Science, 1977, 2004; Adjunct Professor of Poultry Science, 2003.
- Ye, Kaiming** – B.S., M.S., Ph.D. (East China University of Science and Technology), Assistant Professor of Biological and Agricultural Engineering, 2003.
- Yeager, Milton P. Jr.** – B.S. (University of Southern Mississippi), M.S. (University of Arkansas), Visiting Assistant Professor of Operations Management, 1989.
- Yeager, Tim** – M.A., Ph.D. (Washington University), Associate Professor and Arkansas Bankers Association Chair in Banking, 2006.
- Yoes, Janice** – B.M. (Drake University), M.M. (University of Tulsa), Associate Professor of Music, 1985, 1991.
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- Young, Elizabeth** – B.A. (Hendrix College), J.D. (George Washington University), Assistant Professor of Law, 2008.
- Young, James C.** – B.S.C.E., M.S.C.E. (New Mexico State University), Ph.D. (Stanford University), Research Professor of Civil Engineering, 1981, 1996.
- Young, Juana R.** – B.A. (Texas Tech University), M.L.S. (North Texas State University), Professor and Librarian, 1972, 1984.
- Yu, Shui-Qing (Fisher)** – B.S., M.S. (Peking University), Ph.D. (Arizona State University), Assistant Professor of Electrical Engineering, 2008.
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- Zheng, Nan** – B.S. (University of Science and Technology of China), M.S. (University of Rochester), Ph.D. (University of Michigan), Assistant Professor of Chemistry and Biochemistry, 2008.
- Zhengrong, Ryan Tian** – B.S. (Fudan University, Shanghai), Ph.D. (University of Connecticut), Assistant Professor of Chemistry and Biochemistry, 2004.
- Ziegler, Joseph A.** – B.A. (St. Mary's College), Ph.D. (University of Notre Dame), Professor of Economics, 1973, 1980.
- Zies, Brenda** – B.S. (East Texas State University), M.A., Ph.D. (University of Arkansas), Visiting Assistant Professor of Psychology, 2005.
- Zilinsky, Anthony J.** – B.A. (University of Connecticut), M.B.A. (University of Hartford), Visiting Assistant Professor of Operations Management, 2002.
- Zou, Min** – B.S.A.E., M.S.A.E. (Northwestern Polytechnical University), M.S.M.E., Ph.D. (Georgia Institute of Technology), Associate Professor of Mechanical Engineering, 2003, 2008.
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# Glossary

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**Academic Warning.** A status resulting from unsatisfactory grades.

**Act 1052/467.** Section 21 of Arkansas Act 467 of 1989 specifies that all first-time entering freshmen who are enrolled in a bachelor's degree program will be placed in either college-level credit courses in English and mathematics or developmental courses in English composition, reading, and mathematics on the basis of their scores on specified tests. See the Registration portion of the Orientation and Registration chapter for more information.

**Advance Registration.** A period of time scheduled during a regular (fall or spring) semester that allows currently enrolled students to register for the next regular semester. In addition, advance registration for the summer sessions is scheduled during the spring semester.

**Audit.** To take a course without credit.

**Adviser.** A faculty or staff member assigned to a student to advise that student on academic matters that include degree requirements and selection of courses.

**Class Schedule.** List of courses and sections for a specific semester, including names of instructors; day, hour, and place of class meetings; and detailed registration procedures. The class schedule is available online and is sometimes informally referred to as the "Racing Form."

**College or School.** One of ten major divisions within the University that offers specialized curricula.

**Concentration.** A subset of a major's requirements leading to a graduate or bachelor's degree.

**Consent.** A prerequisite that requires the student to obtain approval from the instructor or the department before he or she will be allowed to register for the course.

**Core.** See **University Core** below.

**Corequisite.** A course that must be taken at the same time as the course described.

**Course.** A unit of academic instruction.

**Course Deficiencies.** Lacking required units of study in high school. See the Placement and Proficiency portion of the Admission chapter.

**Course Load.** The number of semester credit hours a student may schedule in a given term.

**Cumulative Grade-Point Average.** An average computed by dividing the total number of grade points earned by the total number of credit hours attempted in all courses for which grades (rather than marks) are given.

**Curriculum.** A program of courses comprising the formal requirements for a degree in a particular field of study.

**Degree Program.** A complete course of study inclusive of all University, college, and departmental requirements.

**Department.** Division of faculty or instruction within a college, such

as Department of Accounting within the Sam M. Walton College of Business.

**Dependent Major.** See **Second Major** below.

**Drop/Add.** Official dropping or adding of courses for which students are registered during specified times as published in the schedule of classes. See also **Withdrawal** below.

**Eight-Semester Degree Completion Program.** Most majors offered by the University of Arkansas can be completed in eight semesters, and the university provides plans that show students which classes to take each semester in order to finish in eight semesters. A few majors either require a summer internship or fieldwork, and may therefore not qualify for the eight-semester degree completion program.

**Elective.** A course not required but one that a student chooses to take.

**Equivalent.** A course allowed in place of a similar course in the same academic discipline. May require approval by an academic dean.

**Fees.** Charges, additional to tuition, that cover specific University services, programs, facilities, activities and/or events. See the Fee and Cost Estimates chapter of this catalog for a full list of fees.

**Grade Points.** Points per semester hour assigned to a grade (not a mark), indicating numerical value of the grade. The grade-point average indicates overall performance and is computed by dividing the total number of grade points earned by the number of semester hours attempted.

**Grade Sanction(s).** A penalty for academic dishonesty. Grade sanctions may consist of either a grade of zero or a failing grade on part or all of a submitted assignment or examination or the lowering of a course grade, or a failing grade.

**Hazing.** Any activity that is required of an individual that may cause mental or physical stress and/or embarrassment when in the process of joining or belonging to any organization.

Honors.

**Integrated Student Information System (ISIS).** This online database maintains student, faculty and staff records and class schedules.

**Laboratory.** Descriptive of work other than class work, such as experimentation and practical application.

**Lecture.** A class session in which an instructor speaks on a specific topic.

**Major.** A main or primary discipline in which a student completes a designated number of courses and hours of credit.

**Minor.** A second discipline or area of study in which a student concentrates in addition to the student's major; each approved minor requires a minimum of 15 hours in a designated discipline.

**Noncredit Course.** A course for which no credit is given. (Some credit courses will not count toward degrees.)

**Overload.** A course load of more semester hours than a student is nor-

mally permitted to schedule in a given period.

**Prerequisite.** A course or requirement that must be completed before the term when the described course is taken.

**Registration.** Enrollment at the beginning or prior to the beginning of a semester, including selection of classes and payment of fees and tuition.

**Registration Fee.** A fee paid by all students who register for classes.

**Sanction(s).** The penalty for noncompliance to a policy. Usually a response that will redirect the individual or group's inappropriate behavior, encourage responsible judgment and ethical reasoning, protect the community's property and rights, and affirm the integrity of the institution's conduct standards.

**Section.** A division of a course for instruction. A course may be taught in one or more sections or classes or at different times, depending on enrollment in the course.

**Second Major.** A major that is not offered independently but which a student may pursue in addition to a primary major.

**Semester Credit Hour.** Unit of measure of college work. One semester credit hour is normally equivalent to one hour of class work or from two to six hours of laboratory work per week for a semester.

**State Minimum Core.** See **University Core** below.

**Student Number.** A number given to each student as a permanent identification number for use at the University.

**Summer Sessions.** Periods of time during the summer when course work is offered. (See the calendar or the summer class schedule for specific times and dates.)

**Suspension.** A status in which students are not permitted to register for courses for a specified time period.

**Syllabus.** An outline or summary of the main points of a course of study, lecture, or text.

**Transcript.** A copy of a student's academic record, mainly intended for communicating information from one institution to another.

**Tuition.** The charge for University enrollment and registration, calculated per credit hour each semester. Tuition rates may vary depending on a student's resident status, undergraduate or graduate standing, and college affiliation. Tuition does not include cost of room and board. Additional charges will apply depending on student status. See the entry for **Fees** above.

**Undeclared Major.** Designation indicating students who have not selected a major.

**Undergraduate Study.** Work taken toward earning an associate or a baccalaureate degree.

**University Core.** The state of Arkansas specifies a number of core courses that students must successfully pass to obtain a degree. These are also sometimes referred to as the State Minimum Core. See the Requirements for Graduation and University Core portions of the Academic Regulations for more information.

**Withdrawal.** Official withdrawal from all courses during a semester at the University.

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## How to Read a Course Description

Courses listed in this section describe all courses approved for offering by the University of Arkansas. The courses are listed alphabetically by code. The word “course” refers to a unit of academic instruction, while the word “class” refers to a course scheduled during a semester or summer session with a certain number of prescribed meetings each week. Successful completion of a class usually earns a specified number of semester hours of credit toward a degree.

The Schedule of Classes lists classes available in a specific semester, along with the instructor of record, time and place the class is being held.



## Course Description Explanations

A course listing comprises the following elements, in order:

**Course Prefix:** This alpha descriptor is the first identifying part of a course. This four-letter code represents the course prefix name. Usually the course prefix will be the same as the department offering the course, but occasionally the prefix is one of many different courses offered in a single department. For example, ARAB refers to Arabic courses, which are offered through the Department of World Languages, Literatures and Cultures.

**Course Number:** Each course is designated by a four-digit number. The first digit identifies the level of the course: 1, freshman level; 2, sophomore level; 3 and 4, junior-senior level; 5, 6, and 7, graduate level. Any exceptions to this practice are stated in the course descriptions.

Students desiring admission to courses offered at levels beyond their standing should request the instructor's permission to enroll. (For definitions of academic standing see Student Standing on page 28.)

The second and third digits of the number identify the course within the department that offers it.

The fourth digit identifies the semester-hour value of the course. Credit for certain courses does not count toward some degrees (see Courses that Do Not Count Toward Degrees on page 27.)

Normally, courses meet once each week for 50 minutes for each hour of course credit. Laboratory, drill and other kinds of activity courses typically meet for two 50-minute periods per week for each hour of credit.

The letter 'V' is used in place of the last digit for those courses in which credit is variable. The minimum and maximum credit hours possible are given in parentheses after the course title.

The first three digits of the number are the same for corequisite courses (for example, a lecture and the corequisite lab or drill).

**Course Suffix:** A suffix to the course number further identifies the specific type of instruction:

D - Drill or Discussion

L - Laboratory

H - Honors Course

E - Honors Drill or Discussion

M - Honors Laboratory

A course with no suffix is a typical lecture course (not an honors course).

**Course Title:** The title of the course is printed in bold letters.

**Course Semester Offering:** Course titles are followed by abbreviations (in parentheses) for the semester in which the course is normally offered. Cross-check with the Schedule of Classes to determine if a course is being offered. Courses marked (Sp) will be offered in the spring, courses marked (Fa) will be offered in the fall, courses marked (Su)

will be offered in the summer, and courses marked (Irregular) will be offered irregularly. Consult the Schedule of Classes to verify that a course is being offered for a given term.

**Course Description:** A brief description of the course content and its major emphasis are stated. If the course is cross-listed (also offered under another course number) a "Same As" statement will be included in the description. If the course is eligible to be repeated for degree credit more than once, a statement will appear to indicate the total hours or times a course may be repeated. If no repeated statement is listed, the course may be used for degree credit only once.

**Requisites:** Requisites are requirements that must be fulfilled either before a course may be taken or at the same time a course is taken. It is the student's responsibility to make sure the proper prerequisites have been completed before enrolling in any class. Prerequisites are courses or requirements that must be completed prior to enrolling in a certain course. Courses may have prerequisites from inside and outside the department. It is the student's responsibility to make sure he/she has completed the proper prerequisites before enrolling in any class. Courses listed as corequisite are to be taken in the same semester as the course desired.

A course listed as both a pre- and corequisites are requirements that if not taken prior to enrolling in a course, must be taken during the same semester as the course.

Students may not enroll in courses for which they do not have the necessary requisites. Students who are in doubt concerning their eligibility to enroll in specific courses should consult with their academic adviser. Students may be dropped from courses for which they do not have the necessary requisites.

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### African American Studies (AAST)

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**AAST1003 Introduction to African American Studies (Fa)** This course is an interdisciplinary study of the tangible and intangible contributions made by the indigenous people of Africa and their descendants to the world order and society with an emphasis on their manifestations in the United States of America.

**AAST3233 African American History to 1877 (Fa)** The course will study the African beginnings, the Caribbean and Latin American influences, and the African American early struggle to survive slavery in the new world, and the continuing social, political, and economical quest to become a first class citizen in American society until Reconstruction, 1492-1877.

**AAST3243 African American History Since 1877 (Sp)** The course will study the major social, political, and economical issues relating to the African American experience beginning with the late post-Reconstruction period and will include all of the major personalities and influences in the Civil Rights Movement, from 1877 to the present.

**AAST3253 The History of Sub-Saharan Africa (Fa)** Sub-Saharan African history from the 18th century to the present, with emphasis on the impact of the slave trade, colonization, Independence, and contemporary issues of the post-colonial period. Examination of the ways Africans experienced change in terms of culture, society, economics, gender, religion, politics, and labor.

**AAST4063 Women in Africa (Irregular)** Diversity of women's life experiences throughout sub-Saharan Africa will be examined. The class will investigate a range of topics, from marriage and motherhood to prostitution and popular culture. A historical dimension will

be present throughout the course, and perspectives from literature and film will also be incorporated. (Same as ANTH 4063)

**AAST4093 The History of African Americans and Social Justice (Even years, Fa)** Explores how the United States has extended social justice to African Americans during the nation's history. Examines social justice for blacks and the impact of historic policies and practices on black life today.

**AAST4293 African American Politics (Irregular)** This is a survey course designed to provide students with a comprehensive overview of African American political participation in the United States. In addition to analyzing important events in African American Politics, the course attempts to explain evolving patterns of political participation in Black America. (Same as PLSC 4293)

**AAST4363 Independence and Africa Today (Sp)** Examines the last half-century of Africa's history, focusing on the last few decades. Introduction of Africa's colonial past, revolutions and struggles for independence. Review of African development in the post-colonial and contemporary era, successes and failures of independent Africa, and the challenges the continent faces today.

**AAST4383 The American Civil Rights Movement (Irregular)** Introduction to the history and development of the civil rights movement in the United States. (Same as HIST 4383)

**AAST4483 African American Biographies (Irregular)** Introduction to the history and intellectual development of famous and not-so-famous African Americans. (Same as HIST 4483)

**AAST499V African American Studies Seminar (Sp, Su, Fa) (1-6)** Explores the various aspects of the African American experience as it relates to the development of black and white relationships in American society and the world at large. (May be substituted for AAST 2003 with permission). Prerequisite: Second semester sophomore standing. (Same as DRAM 4463) May be repeated for up to 6 hours of degree credit.

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### Accounting (ACCT)

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**ACCT3013 Accounting View of Economic Events (Sp, Fa)** This course examines the relationship between economic events and the accounting view of those events. It explores the information that is captured by various accounting models and information that is ignored. The course emphasizes business processes, double entry accounting, and computer-based accounting information systems. Prerequisite: WCOB 1023.

**ACCT310V Accounting Internship (Sp, Su, Fa) (1-3)** This class is designed to give students an internship opportunity to combine their formal academic preparation with an exposure to the accounting profession. Prerequisite: ACCT 3723 and ACCT 3843. May be repeated for up to 3 hours of degree credit.

**ACCT3533 Accounting Technology (Sp, Fa)** This course provides an overview of accounting information systems and illustrates the importance of technology to accountants. Students are exposed to a variety of information technologies including manual, file-oriented, and database systems. The relative advantages and disadvantages of each type of system are highlighted and discussed. Prerequisite: ACCT 3723 or ACCT 3013 each with a grade of "C" or better.

**ACCT3613 Managerial Uses of Accounting Information (Sp, Fa)** Use of accounting information for managerial decisions in a changing, global environment. Identifying the specific information needs of managerial decisions, focusing on the role of both financial and non-financial accounting information within the context of a continually changing information system technology. Covers business as well as non-profit and governmental organizations. This course includes spreadsheet analysis. Prerequisite: WCOB 1023.

**ACCT3723 Intermediate Accounting I (Sp, Fa)** This course is designed to study the theoretical basis for financial accounting concepts and principles related to financial reporting. This course emphasizes researching technical accounting pronouncements for application to external financial reporting issues. Prerequisite: WCOB 2043 with a grade of "C" or better.

**ACCT3753 Intermediate Accounting II (Sp)** This is the second financial accounting course designed to continue study of financial accounting concepts and principles. This course emphasizes research of technical accounting pronouncements for application to external financial reporting issues. Prerequisite: ACCT 3013 or ACCT 3723 each with a grade of "C" or higher.

**ACCT3843 Fundamentals of Taxation (Sp, Fa)** Overview of basic income tax principles and tax planning techniques. Overview of the income tax treatment of business entities. Focus on the income tax treatment of individuals (with emphasis on the Federal Income Tax). Prerequisite: ACCT 3013 or ACCT 3723 each with a grade of "C" or better or graduate standing.

**ACCT4003H Honors Accounting Colloquium (Irregular)** Explores events, concepts and/or new developments in the field of accounting. Prerequisite: Senior standing.

**ACCT410V Special Topics in Accounting (Irregular) (1-3)** Explore current events, concepts and new developments relevant to Accounting not available in other courses. Prerequisite: ACCT 3013

with a grade of "C" or better.

**ACCT4203 Taxation of Business Entities (Irregular)** Focus on the income tax treatment of corporations and pass-through business entities. Prerequisite: ACCT 3843 with a grade of C or better.

**ACCT4673 Product, Project and Service Costing (Sp)** Cost systems with emphasis on information generation for cost management of products, projects and services. The course includes spreadsheet and other computer program analysis. Prerequisite: ACCT 3013 or ACCT 3723 each with a grade of "C" or better.

**ACCT4963 Operational Auditing (Fa)** The audit of efficiency, effectiveness, and performance of business and nonbusiness entities. Includes coverage of performance auditing techniques and application of these techniques to financial and nonfinancial functions. Prerequisite: ACCT 3013 or ACCT 3723 each with a grade of "C" or better.

**ACCT5223 Accounting for Supply Chain & Retail Organizations (Fa)** Highlights the role played by accounting information in managing supply chains and retail operations. Provides tools for managing cost flows, including activity-based costing, retail accounting, and operational budgeting. Focuses on improving decision making processes, and linking the impact of retail/supply chain decisions to financial statements and shareholder value. Prerequisite: MBAD 511V with a grade of "C" or better.

**ACCT5413 Advanced Financial Accounting (Fa)** Integrated course which examines the financial reporting, tax, managerial, systems and auditing aspects of major corporate restructurings arising from events such as mergers, acquisitions, spinoffs, reorganizations and downsizing. Prerequisite: ACCT 4753 with a grade of "C" or better.

**ACCT5433 Fraud Prevention and Detection (Fa)** An examination of various aspects of fraud prevention and detection, including the sociology of fraud, elements of fraud, types of fraud involving accounting information, costs of fraud, use of controls to prevent fraud, and methods of fraud detection. Prerequisite: MBAD 512V with a grade of "C" or better.

**ACCT5443 Asset Management (Sp)** Managing assets to achieve corporate strategy. Included are issues such as strategy formulation, acquisition processes, internal controls, system requirements, accounting measurements, inventory models, re-engineering, capital budgeting, tax issues, and discussion of current business events that have ethical implications. Prerequisite: MBAD 513V with a grade of "C" or better.

**ACCT5463 Financial Statement Analysis (Sp)** This course is designed to study financial statements and their related footnotes; tools and procedures common to financial statement analysis; the relationships among business transactions, environmental forces (political, economic, and social), and reported financial information; and how financial statement information can help solve certain business problems. Prerequisite: ACCT 3723 with a grade of "C" or better.

**ACCT549V Special Topics in Accounting (Sp, Fa) (1-3)** Seminar in current topics not covered in other courses. Students may enroll in one or more units. May be repeated for up to 3 hours of degree credit.

**ACCT5873 Advanced Taxation (Fa)** In-depth coverage of the tax treatment of corporations including advanced tax issues. Introduction to tax research including the organization and authority of tax law; accessing and using the tax law; and, applying tax law to taxpayer scenarios. Prerequisite: ACCT 3843 or equivalent with a grade of "C" or better.

**ACCT5883 Individual Tax Planning (Sp)** In-depth coverage of the tax treatment of passthrough business entities including advanced tax issues. Overview of the income tax treatment of estates and trusts. Overview of the essentials of estate and gift taxation. Prerequisite: MBAD 512V or ACCT 3843 each with a grade of "C" or better.

**ACCT5953 Assurance Services (Fa)** The expression of assurance on financial statements and other forms of information for decision makers. Includes risk assessment, evidence gathering, and reporting. Prerequisite: ACCT 4753 with a grade of "C" or better.

**ACCT6013 Graduate Colloquium (Irregular)** Presentation and critique of research papers and proposals. May be repeated for up to 9 hours of degree credit.

**ACCT6033 Accounting Research Seminar I (Irregular)** First course in the accounting research seminar sequence which explores and evaluates current accounting literature. Course content reflects recent developments in the literature and specific interests of participants. Examples of potential topics include research methods in accounting, managerial accounting, behavioral accounting,

**ACCT6133 Accounting Research Seminar II (Irregular)** Second course in the accounting research seminar sequence which explores and evaluates current accounting literature. Course content reflects recent developments in the literature and specific interests of participants. Examples of potential topics include research methods in accounting, financial accounting, managerial accounting, behavioral accounting, tax, audit, international accounting, and education. Prerequisite: ACCT 6033.

**ACCT6233 Accounting Research Seminar III (Irregular)**

Third course in the accounting research seminar sequence which explores and evaluates current accounting literature. Course content reflects recent developments in the literature and specific interests of participants. Examples of potential topics include research methods in accounting, financial accounting, managerial accounting, behavioral accounting, tax, audit, international accounting, and education. Prerequisite: ACCT 6033.

**ACCT636V Special Problems in Accounting (Sp, Fa) (1-6)** Special research project under supervision of a graduate faculty member.

**ACCT6433 Accounting Research Seminar IV (Irregular)** Fourth course in the accounting research seminar sequence which explores and evaluates current accounting literature. Course content reflects recent developments in the literature and specific interests of participants. Examples of potential topics include research methods in accounting, financial accounting, managerial accounting, behavioral accounting, tax, audit, international accounting, and education. Prerequisite: ACCT 6033.

**ACCT6633 Accounting Research Seminar V (Irregular)** Fifth course in the accounting research seminar sequence which explores and evaluates current accounting literature. Course content reflects recent developments in the literature and specific interests of participants. Examples of potential topics include research methods in accounting, financial accounting, managerial accounting, behavioral accounting, tax, audit, international accounting, and education. Prerequisite: ACCT 6033.

**ACCT700V Doctoral Dissertation (Sp, Fa) (1-18)** Prerequisite: Candidacy.

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### Air Force ROTC (AERO)

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**AERO1011 The Foundations of the United States Air Force I (Fa)**

A survey course designed to introduce cadets to the United States Air Force and Air Force Reserve Officer Training Corps. Topics include: mission and organization of the Air Force, officership and professionalism, military customs and courtesies, Air Force officer opportunities, and an introduction to communication skills. Leadership LAB mandatory for cadets. Corequisite: Lab component.

**AERO1021 The Foundations of the United States Air Force II (Sp)**

A survey course designed to introduce cadets to the United States Air Force and Air Force Reserve Officer Training Corps. Topics include: mission and organization of the Air Force, officership and professionalism, military customs and courtesies, Air Force officer opportunities, and an introduction to communication skills. Leadership LAB mandatory for cadets. Corequisite: Lab component.

**AERO2011 The Evolution of Air and Space Power I (Fa)** A historical survey of air and space power, from the first balloons and dirigibles to the space-age global positioning systems of the Persian Gulf War. Historical examples illustrate the development of Air Force capabilities and missions. Additional topics: Principles of War and Tenets of Air and Space Power. Leadership LAB mandatory for cadets. Corequisite: Lab component.

**AERO2021 The Evolution of Air Power II (Sp)** A historical survey of air and space power, from the first balloons and dirigibles to the space-age global positioning systems of the Persian Gulf War. Historical examples illustrate the development of Air Force capabilities and missions. Additional topics: Principles of War and Tenets of Air and Space Power. Leadership LAB mandatory for cadets. Corequisite: Lab component.

**AERO3013 Air Force Leadership Studies I (Fa)** A study of leadership, management fundamentals, professional knowledge, Air Force personnel and evaluation systems, leadership ethics, and the communication skills required of an Air Force junior officer. Case studies are used to examine Air Force leadership and management situations. Corequisite: Lab component.

**AERO3023 Air Force Leadership Studies II (Sp)** A study of leadership, management fundamentals, professional knowledge, Air Force personnel and evaluation systems, leadership ethics, and the communication skills required of an Air Force junior officer. Case studies are used to examine Air Force leadership and management situations. Corequisite: Lab component.

**AERO4013 National Security Affairs and Preparation for Active Duty I (Fa)**

Examines the national security process, regional studies, advanced leadership ethics, and Air Force doctrine. Special topics of interest focus on the military as a profession, officership, military justice, civilian control of the military, preparation for active duty, and current issues affecting military professionalism. Communication skills are honed within this structure. Corequisite: Lab component.

**AERO4023 National Security Affairs and Preparation for Active Duty II (Sp)**

Examines the national security process, regional studies, advanced leadership ethics, and Air Force doctrine. Special topics of interest focus on the military as a profession, officership, military justice, civilian control of the military, preparation for active duty, and current issues affecting military professionalism.

Communication skills are honed within this structure. Corequisite: Lab component.

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### Agri, Food & Life Sciences (AFLS)

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**AFLS1011 Freshman Orientation (Fa)** An orientation to academic expectations, policies and procedures, resources, and career exploration in agricultural, food and life sciences. Lecture two days a week during the first eight weeks of the semester.

**AFLS1011H Honors Freshman Orientation (Fa)** The course will serve as an introduction to the basic information and requirements of the AFLS Honors Program. The course is available to all students, but is required for students in the honors program. Topics covered will include: purpose and organization of the honors program, course requirements, research and creative activity opportunities, and written and oral communication exercises. Recitation 3 hours per week for the first 5 weeks of the semester.

**AFLS102VH Honors Special Topics for Freshmen (Irregular) (1-6)** Topics not covered in other courses or in-depth study of a particular topic. Used primarily with the program for the Honors Program. Must be in Honors program to register for this course.

**AFLS2003 Introduction to Global Agricultural, Food and Life Sciences (Fa)** A cross-disciplinary approach focusing on global environmental resources, animal and crop production, food safety and nutrition, agricultural marketing and merchandising, trade, agricultural policies and culture. Topics also will include transportation, law and information systems in various geographic regions. Lecture 3 hours per week.

**AFLS300V Study Abroad (Sp, Su, Fa) (1-24)** Open to undergraduate students studying abroad in officially sanctioned programs. Study abroad may include summer internships, special topics, coursework abroad and/or directed individual or group study abroad trips of one-to-four weeks duration. May be repeated for up to 24 hours of degree credit.

**AFLS3131H Honors Management and Leadership (Fa)**

Leadership styles and principles and organizational systems as they relate to professional situations. Recitation 3 hours per week for the first 5 weeks of the semester. Prerequisite: junior standing.

**AFLS3211H Honors Professional Development (Sp)**

Professional networking, communication skills, and group dynamics as they relate to research, teaching, and extension. Recitation 3 hours per week for 5 weeks.

**AFLS3231H Honors Intro to Scientific Thinking & Methods - Logic, Reasoning, & Sci. Argumentation (Fa)** A course to introduce students to general patterns of scientific thinking, and methods of scientific evaluation and conclusion building through discussions, readings, and exercises in logic, reasoning, and argumentation. Recitation 3 hours per week for the second 5 weeks of the semester.

**AFLS3313H Honors Global Issues in AFLS (Sp)** The course offers students the opportunity to increase their understanding of global issues related to AFLS. The course is open to all students, but first priority will be given to AFLS Honors Students. A mandatory study tour will be scheduled during Spring Break. Recitation 3 hours per week. Prerequisite: Instructor permission.

**AFLS3412H Honors Proposal Development (Sp)** This course offers a synthesis level learning opportunity. Course will include creative process, ethics, proposal writing, literature review, experimental design, scientific theory and methods, data collection, statistics, budget, and summary. Students will draw on their background and presentations to create written proposals. Three hours per week for 10 weeks. Prerequisite: Junior or senior standing.

**AFLS3512H Honors Rotations in Agricultural Laboratory Research (Sp)** A laboratory course to introduce students to current laboratory research techniques used in agricultural and life sciences. Hands-on laboratory exercises will emphasize current cellular and molecular research techniques, laboratory notebook keeping, data interpretation, and presentation of results. 4 hours per week. Prerequisite: BIOL 1543 or equivalent.

**AFLS400VH Honors Thesis (Sp, Su, Fa) (1-6)** May be repeated for up to 6 hours of degree credit.

**AFLS401VH Honors Special Topics (Irregular) (1-3)** Studies of selected topics not covered in other courses. Must be in the Honors program to register for this course. May be repeated for up to 4 hours of degree credit.

**AFLS4021 Internship for Ambassadors (Sp, Fa)** Practical experience gained through group dynamics, communication, planning and implementing college wide activities. Must be selected as a college Ambassador before enrolling. May be repeated for up to 6 hours of degree credit.

**AFLS4431H Honors Exploring Ethics (Fa)** Exploring issues relevant to human deeds in plants, animals, and environment. Issues to be addressed include the sanctity of life issues, their role of mass media in the modern world and the responsibility of individuals as professionals. Recitation 3 hours per week for the second 5 weeks of the semester.

**AFLS5001 Seminar (Fa)** Review of scientific literature and oral reports on current research in the agricultural, food and life sciences. May be repeated for up to 4 hours of degree credit.

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### Agricultural Economics (AGEC)

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**AGEC1103 Principles of Agricultural Microeconomics (Sp, Fa)** Introduction to agricultural economics, including a survey of the role and characteristics of agriculture businesses in our economic system. Basic economic concepts concerning price determination, profit maximization, and resource use are emphasized. The use of economic principles as applied to the production and marketing decisions made by managers of agricultural firms is demonstrated. Pre- or Corequisite: MATH 1203.

**AGEC2103 Principles of Agriculture Macroeconomics (Sp, Fa)** Applications of economics principles to problems of agricultural production, distribution, and income; including a study of the interrelationship between agriculture and other segments of the economy; and the dynamic forces in the economy which affect agriculture. Pre- or Corequisite: MATH 1203.

**AGEC2143 Agribusiness Financial Records (Fa)** Principles of small agricultural business management accounting practices are taught to allow students to gain hands-on experience with financial record keeping for a business. Resulting financial statements are analyzed to determine opportunities for enhancing financial efficiency. Prerequisites: AGME 2903 or equivalent and AGEC 1103.

**AGEC2303 Introduction to Agribusiness (Sp)** Introduction to agribusiness issues as they relate to the food processing, wholesale and retail sectors of the agricultural industry. Coverage of methods and tools agribusiness managers use to evaluate business opportunities. Case studies serve to communicate concepts of product distribution, design, promotion and pricing in the development of a marketing plan. Prerequisite: AGEC 1103 or ECON 2023.

**AGEC2403 Quantitative Tools for Agribusiness (Sp)** Introduction to quantitative methods used in agricultural economics and agribusiness with an emphasis on skills and techniques that will enhance the ability of students to perform in upper division coursework. Provides an overview of statistical and optimization methods used in research problems, economic theory, and applied decision making activities. Prerequisites: AGEC 1103 and MATH 2053.

**AGEC3303 Food and Agricultural Marketing (Fa)** Surveys consumer trends in food markets and the marketing activities of the food and fiber system. Emphasizes marketing concepts for both commodities and differentiated food products. Topics include applied consumer and price theory; marketing management; structure and performance of the food system; and current agricultural marketing topics. Prerequisite: AGEC 1103 or ECON 2023.

**AGEC3313 Agribusiness Sales (Sp)** Principles of professional sales and sales management techniques used in food and agricultural firms; develop a professional sales presentation; study current agribusiness industry professional sales persons and sales practices and techniques. Prerequisites: AGEC 1103 or AGEC 2103 or ECON 2013 or ECON 2023 or ECON 2143 or equivalent.

**AGEC3373 Futures and Options Markets (Sp)** Theory and mechanics of commodity futures and options markets including trading, margin, fees, etc. Price relationships between cash, futures and options. Fundamental and technical price analysis. Price risk management strategies for producers and users of agricultural commodity marketing plan. Speculative and hedging simulation exercises. Prerequisite: AGEC 1103 or ECON 2023.

**AGEC3403 Farm Business Management (Fa)** Application of economic principles for the profitable organization and operation of the farm business. Focuses upon agricultural production management decision-making tools: budgeting techniques (enterprise, partial, cash flow), balance sheet, income statement, cash flow, investment analysis and risk management. Recommended: AGEC 1103 (or ECON 2023), AGEC 2143, and AGME 2903

**AGEC3413 Principles of Environmental Economics (Sp)** An introductory, issues-oriented course in the economics of the environment. The course will focus on what is involved in how society makes decisions about environmental quality. The environmental issues important to the State of Arkansas and the United States will be emphasized. Prerequisite: AGEC 1103 or ECON 2023. (Same as ENSC 3413)

**AGEC3503 Agricultural Law I (Sp)** Examination of those areas of law especially applicable to agriculture. Fundamentals of contract law, torts law, and property law will accompany discussion of major areas of agricultural law; acquisition and disposal of farmland; farm tenancies; rights and limitations in the use and ownership of farmland; water law; environmental protection; protection of the productivity of agricultural land; and the law of sales and secured transactions in an agricultural context.

**AGEC3523 Environmental and Natural Resources Law (Even years, Sp)** Principles of environmental and natural resources law relevant to agriculture, food and the environmental sciences; legal principles relating to regulation of water, air, hazardous

substances, land, wildlife, livestock, and water rights. Principles of civil and criminal liabilities and other developing legal and regulatory issues relating to agriculture and natural resources.

**AGEC400V Special Problems (Sp, Su, Fa) (1-6)** Special studies and readings conducted under the direct supervision of staff members to satisfy the requirements of individual students. May be repeated for up to 6 hours of degree credit.

**AGEC401V Internship in Agribusiness (Sp, Su, Fa) (1-6)** A supervised practical work experience in an agribusiness firm or a governmental or industrial organization having direct impact on agriculture in order to gain professional competence and insight to employment opportunities. Prerequisite: junior standing. May be repeated for up to 8 hours of degree credit.

**AGEC402V Special Topics (Irregular) (1-3)** Studies of selected topics in agricultural economics not available in other courses.

**AGEC4113 Agricultural Prices and Forecasting (Sp)** Price theory and techniques for predicting price behavior of general economy and price behavior of individual agricultural products will be analyzed. Provides practice in the application of economics and statistics to agricultural price analysis. Lecture 2 hours, laboratory 2 hours per week. Prerequisite: AGEC 1103 (or ECON 2023), AGEC 2403, (introductory statistics AGST 4023 or STAT 2303 or WCOB 1033) and MATH 2053.

**AGEC4143 Agricultural Finance (Fa)** Methods and procedures whereby agricultural firms acquire and utilize funds required for their successful operation. Emphasis is placed upon role of finance and financial planning and consideration is given to an understanding of financial firms serving agriculture. AGEC 2143 or WCOB 1023 is recommended. Prerequisite: AGEC 1103 (or ECON 2023) and AGEC 2103 (or ECON 2013).

**AGEC4163 Agricultural and Rural Development (Irregular)** Examination of agricultural and rural development issues in less developed countries. Alternative agricultural production systems are compared, development theories examined, and consideration given to the planning and implementation of development programs. Prerequisite: AGEC 1103 (or ECON 2023).

**AGEC4303 Advanced Agricultural Marketing Management (Irregular)** Marketing concepts will be developed and applied to the global food and fiber system. The course will use both commodity and product marketing principles and economic theory to analyze varied marketing situations. Case studies will be used to demonstrate the role that demand analysis and consumer behavior play in market management. Prerequisite: AGEC 2303 and AGEC 3303.

**AGEC4313 Agricultural Business Management (Fa)** The planning, organizing, leading and controlling functions of management as they relate to agricultural business firms. Marketing of value-added products, budgeting, organizational structure, cost control, financial statements, capital budgeting and employee supervision and motivation. Case studies are used to teach communication and decision-making skills. Prerequisite: AGEC 2143 or equivalent, AGEC 2303 or equivalent, and senior standing is recommended.

**AGEC4323 AgriBusiness Entrepreneurship (Sp)** Agribusiness entrepreneurship is the process of bringing food or rural-based products and services from conceptualization to market. The course presents the opportunities, problems and constraints facing individuals and firms operating in rural or isolated markets while emphasizing the steps in conceptualization, development, marketing, and delivery-selling of agribusiness rural products. Prerequisite: AGEC 1103 or equivalent.

**AGEC4373 Advanced Price Risk Management (Sp)** Use of futures markets as risk shifting institutions. Students design and implement hedging and cross hedging strategies for grain farmers, country elevators, soybean crushers, poultry firms, etc. Spreadsheets and statistical techniques are used to develop optimal hedging ratios. Prerequisite: AGEC 3373.

**AGEC4613 Domestic and International Agricultural Policy (Fa)** Agricultural and food policies studied from domestic and international perspectives. Examines public policy in terms of rationale, content, and consequences. Economic framework used to assess policies to improve competitive structure, operation, and performance of U.S. and international food and agriculture. Farm, international trade, resource, technology, food marketing, and consumer policies analyzed. Prerequisite: AGEC 1103 (or ECON 2023) and AGEC 2103 (or ECON 2013).

**AGEC500V Special Problems (Sp, Su, Fa) (1-3)** Individual reading and investigation of a special problem in agricultural economics not available under regular courses, under the supervision of the graduate faculty. Prerequisite: Graduate standing.

**AGEC5011 Seminar (Sp, Fa)** Presentation and discussion of graduate student research. Formal presentations are made by all graduate students. Consideration given to research design, procedures, and presentation of results. Prerequisite: Graduate standing.

**AGEC502V Special Topics (Irregular) (1-3)** Advanced studies of selected topics in agricultural economics not available in other courses. Prerequisite: Graduate standing.

**AGEC503V Internship in Agricultural Economics (Sp,**

**Su, Fa) (1-3)** On-the-job application of skills developed in the M.S. program.

**AGEC5133 Agricultural and Environmental Resource Economics (Even years, Sp)** An economic approach to problems of evaluating private and social benefits and costs of altering the environment. Emphasis given to the interaction of individuals, institutions, and technology in problems of establishing and maintaining an acceptable level of environmental quality. Prerequisite: Minimum of 3 hours Agricultural Economics or Economics at 3000 level or higher or PhD standing.

**AGEC5143 Financial Management in Agriculture (Irregular)** Covers advanced topics in agricultural finance. The general focus of the course is the financial management of non-corporate firms. Covers the basic tools of financial analysis including financial arithmetic, asset evaluation under risk, and financial analysis and planning using econometric models. Such topics covered include management of current assets, capital budgeting, capital structure, and institutions involved in agricultural finance. Prerequisite: Graduate standing.

**AGEC5153 The Economics of Public Policy (Sp)** This class will examine the impact of public policy on agricultural and other business sectors as well as households and individuals, particular in rural areas. Emphasis will also be placed on analyzing the potential impact of future policy changes. The course will focus on the application of welfare criteria and economic analyses to the problems and policies affecting resource adjustments in agriculture and rural communities. Prerequisite: Graduate standing.

**AGEC5303 Agricultural Marketing Theory (Fa)** Survey of the structure of agricultural product and factor markets including a critique of theoretical analyses of industry structure, conduct and performance; and a review of market structure research in agricultural industries. Prerequisite: Graduate standing.

**AGEC5403 Quantitative Methods for Agribusiness (Fa)** Application of quantitative techniques used to support managerial decision-making and resource allocation in agricultural firms. Provides exposure to mathematical and statistical tools (regression analysis, mathematical programming, simulation) used in economic analysis in agriculture. Emphasis is placed on computer applications with conceptual linkage to economic theory. Prerequisite: Graduate standing.

**AGEC5413 Agribusiness Strategy (Sp)** Addresses problems of strategy formulation in agribusiness emphasizing current problems and cases in agriculture. Surveys modern and classic perspectives on strategy with applications to agribusiness. Examines the development of firm level strategies within the structure and competitive environment of agricultural firms and industries. Prerequisite: Graduate standing.

**AGEC5613 Econometrics I (Fa)** Use of economic theory and statistical methods to estimate economic models. The single equation model is examined emphasizing multicollinearity, autocorrelation, heteroskedasticity, binary variables and distributed lags and model specification. Prerequisite: MATH 2043 and knowledge of matrix methods, (which may be acquired as a corequisite), and (AGEC 1103 or ECON 2023) and (AGEC 2403 or AGST 4023 or STAT 2303 or WCOB 1033). (Same as ECON 5613)

**AGEC5713 Food Safety Law (Irregular)** This course provides students with an introduction to food law and policy, history of food regulation, the organization of federal food law and regulatory agencies, government inspection and enforcement powers, food safety standards, food labeling, food advertising and product liability. Web-based course.

**AGEC600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**AGEC700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Candidacy.

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### Agricultural Education (AGED)

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**AGED1001 Orientation to Agricultural and Extension Education (Fa)** Continuation of AFLS 1011, Freshman Orientation, with attention given to sharing of possible solutions to individual problems. Exploration of anticipated collegiate experiences for departmental majors as well as post-graduation opportunities. Student and faculty interaction is stressed. The class meets during the last half of the fall semester twice a week. The class also meets 1 or 2 evenings for up to two hours each time.

**AGED102V Special Topics for Freshmen (Irregular) (1-2)** Topics not covered in other courses or in-depth study of a particular topic. Used primarily with the program for Beginning Scholars and the Honors Program. May be repeated for up to 2 hours of degree credit.

**AGED1031 Introduction to Early Field Experience (Fa)** A thirty hour field experience designed to give prospective agricultural education teachers an opportunity to observe and participate in a variety of school settings. Corequisite: CIED 1002.

**AGED1122 Agricultural Youth Organizations (Fa)** Survey course of agricultural youth organizations including 4-H, FFA,

Grange, and others pertaining to membership, awards programs, benefits, and special recognition programs. Lecture and discussion. Two periods per week.

**AGED3133 Methods in Agricultural Education (Fa)** Methods and techniques in teaching agriculture at the secondary level. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Pre- or Corequisite: CIED 1002. Prerequisite: AGED 1031 or CIED 1011.

**AGED3141L Ag Communications Lab (Sp, Fa)** Corequisite: AGED 3142.

**AGED3142 Agri Communications (Sp, Fa)** An overview of communications in the agricultural, food and life sciences, including newsletter design, slide presentations, newswriting, electronic communication and web publishing. Corequisite: AGED 3141L.

**AGED3153 Leadership Development in Agriculture (Sp)** Identification of styles and roles of leadership; development of leadership techniques and skills required in working with organizations; dynamics of group action; methods of resolving conflict; ethical considerations for leaders; and personal skills development. Prerequisite: Junior standing.

**AGED3243 Ag Reporting and Feature Writing (Odd years, Fa)** This course will provide students an exposure to writing, interviewing, and editing news on agricultural issues in agricultural industry publications. Students will gain practical experience with journalistic interviewing, news writing, feature writing, digital photography, and writing for broadcast on agricultural issues. This course is designed for students with at least six hours of upper division courses. Prerequisite: Junior standing.

**AGED3942 Professional Development in Agricultural Communications (Even years, Fa)** Overview of professional and technical skills needed to succeed in internships and jobs in the field of agricultural communications.

**AGED4003 Issues in Agriculture (Sp, Fa)** Lecture and discussion on local, regional, national and international issues related to agricultural policy, ethics, environment, society, and science. Designed for students with at least six hours of upper division agricultural science courses. Prerequisite: Senior standing.

**AGED400V Special Problems in Agricultural and Extension Education (Sp, Su, Fa) (1-6)** Individual study or research for advanced undergraduates in the field of agricultural and extension education.

**AGED4012 Program Development (Sp)** Principles and concepts of leadership, program organization, supervised agricultural experience, and advisory committees. This course is a portion of pre-professional studies required for certification in agricultural education. Prerequisite: AGED 3133. (Same as AGED 401V)

**AGED401V Special Topics (Irregular) (1-3)** Studies of selected topics in agricultural or extension education not covered in other courses. (Same as AGED 4012) May be repeated for up to 4 hours of degree credit.

**AGED4143 Electronic Communications in Agriculture (Even years, Sp)** An overview of communication technology in the agricultural, food and life sciences.

**AGED4243 Graphic Design in AFLS Productions (Odd years, Sp)** This course provides students with graphic design and software skills specific to industries in Agriculture, Food, and Life Sciences. Students will learn to use industry-standard software (InDesign, Photoshop, Illustrator, Microsoft Excel, etc.) to prepare text and graphics and package them for use in print production. Prerequisite: AGME 2903

**AGED4343 Communication Campaigns in Agriculture (Even years, Fa)** Students will develop understanding of the principles, practices and applications of social marketing, integrated marketing communications, advertising and public relations as they pertain to developing communication campaign strategies for the agricultural industry. Students will develop a communication campaign for an agricultural company and/or entity focused on a specific product or service. Prerequisite: Senior or Graduate status.

**AGED4443 Principles of Technological Change (Fa)** This course introduces a structured approach for dealing with the organizational and human aspects of technology transition, including the key concepts of resistance and change management, organizational change, communications, and processes by which professional change agents influence the introduction, adoption, and diffusion of technological change. This course may be offered as a web-based course. Prerequisite: Junior status.

**AGED4632 Teaching Diverse Populations in Agricultural and Extension Education (Sp)** This course is designed to provide pre-service teachers of agriculture with an understanding of teaching diverse populations as applied to problems of practice in agricultural and extension education.

**AGED475V Internship in Agri Educ (Sp, Su, Fa) (1-6)** Scheduled practical field experiences under the supervision of a professional practitioner in off-campus secondary school systems. Emphasis includes classroom preparation, teaching, and student evaluation. Prerequisite: Admission into Clinical Practice. May be

repeated for up to 6 hours of degree credit.

**AGED4843 Methods in Agricultural Laboratories (Sp)** Methods and management techniques in all types of agricultural laboratories that may be in a secondary agricultural science program. Emphasis on management of students and facilities, equipment, and materials. Lecture 2 hours, laboratory 4 hours per week. Prerequisite: AGME 2123.

**AGED5001 Seminar (Sp)** Presentations and discussion of graduate student research as well as review of current literature and topics of current interest by students and faculty. All graduate students will make at least one formal presentation.

**AGED5013 Advanced Methods in Agricultural Mechanics (Fa)** Emphasis on shop organization and management, courses of study, unit shop instruction, and development of skills in agricultural mechanics.

**AGED5031 Ethics in Agricultural and Extension Education (Fa)** A study of ethics as applied to problems of professional practice. The focus will be on case studies.

**AGED5033 Developing Leadership in Agricultural Organizations (Fa)** Organizational concepts of leadership; administrative styles and structures; leadership for boards, committees, governmental bodies, and review of societal and political processes. Prerequisite: Graduate standing.

**AGED5053 Philosophy of Agricultural and Extension Education (Sp)** An examination and analysis of social and economic events leading to the establishment and maintenance of federal, state, county, and local agricultural education programs. Lecture 3 hours per week. Prerequisite: Graduate standing.

**AGED5074 Program Management Practicum (Irregular) A** course involving activities emphasizing the practical application of theory in on-the-job experiences in program management; must be taken in conjunction with AGED 575V. Prerequisite: Admission into the MAT program.

**AGED510V Special Problems (Sp, Su, Fa) (1-6)** Individual investigation of a special problem in agricultural education which is not available through regular courses. These will be directed by a member of the graduate faculty. Prerequisite: Graduate standing.

**AGED520V Special Topics in Agricultural and Extension Education (Irregular) (1-4)** Topics not covered in other courses or a more intensive study of specific topics in agriculture education. Prerequisite: Graduate standing.

**AGED5463 Research Methodology in the Social Sciences (Sp)** Logical structure and the method of science. Basic elements of research design; observation, measurement, analytic method, interpretation, verification, presentation of results. Applications to research in economic or sociological problems of agriculture and human environmental sciences. Prerequisite: Graduate standing. (Same as HESC 5463)

**AGED5473 Interpreting Social Data in Agriculture (Fa)** The development of competencies in analyzing, interpreting and reporting the results of analyses of social science data in agriculturally related professions. Students will select appropriate analysis techniques and procedures for various problems, analyze data, and interpret and report the results of statistical analyses in narrative and tabular form. Prerequisite: AGST 4023 (or EDFD 5393) and AGED 5463 (or RSOC 5463 or HESC 5463).

**AGED550V College Teaching in Agriculture and Related Disciplines (Irregular) (1-3)** For students who are pursuing graduate degrees where emphasis is on preparation for a research career, but who also may desire or expect to teach. Provides theory and practice in planning and executing a college-level course.

**AGED575V Internship in Agricultural Education (Sp, Su, Fa) (1-6)** Scheduled practical field experiences under supervision of a professional practitioner in off-campus secondary school systems. Emphasis includes classroom preparation, teaching, and student evaluation.

**AGED600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

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### Agricultural Mechanization (AGME)

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**AGME1611L Fundamentals of Agricultural Systems Technology Laboratory (Fa)** Study of basic mathematical and physical science concepts important in the mechanization of agriculture. Laboratory required for agricultural education, communication and technology majors enrolled in AGME 1613, optional for others enrolled in AGME 1613. Corequisite: AGME 1613.

**AGME1613 Fundamentals of Agricultural Systems Technology (Fa)** Introduction to basic physical concepts important in agricultural technical systems: applied mechanics, power and machinery management, structures and electrification, and soil and water conservation. Lecture 3 hours per week. Corequisite: AGME 1611L (for AECT Majors).

**AGME2123 Metals and Welding (Sp, Fa)** An introduction to agricultural mechanics shop work to include hot and cold metal work, arc welding, and gas welding and cutting. Lecture 2 hours, laboratory

3 hours per week. Corequisite: Lab component.

**AGME2903 Agricultural and Human Environmental Sciences Applications of Microcomputers (Sp, Fa)** Lecture and laboratory assignments covering the contemporary use of microcomputers in agricultural research, production, and home economics. Major emphasis placed on learning to use selected, appropriate software packages. Lecture 2 hours per week, laboratory 2 hours per week.

**AGME3042 Agricultural Construction Technology (Sp)** Principles of building design and construction. Includes site selection calculating structural loads and computerized packages for building design. Safety practices, selection of building materials and determining costs are also included. Lecture is one hour and lab is two hours per week. Prerequisite: MATH 1203 and junior standing.

**AGME3101L Small Power Units/Turf Equipment Laboratory (Sp)** Testing, evaluation, and maintenance of engines, hydrostatic power transmission systems, and equipment commonly used in the turf and landscaping industries. Corequisite: AGME 3102. Prerequisite: MATH 1203.

**AGME3102 Small Power Units/Turf Equipment (Sp)** Principles of operation, adjustment, repair, maintenance, and trouble shooting of small air-cooled engines and power units, including various engine systems, service and maintenance of turf equipment and machinery. Lecture 2 hours per week. Corequisite: AGME 3101L. Prerequisite: MATH 1203.

**AGME3153 Surveying in Agriculture and Forestry (Fa)** Techniques and procedures normally used in determining areas and characterizing the topography of agricultural and forest lands. Includes basic concepts of surveying; use and care of level, transit, distance measuring equipment; topographic mapping and public land surveys. Lecture and laboratory 6 hours per week. Prerequisite: MATH 1203.

**AGME3173 Electricity in Agriculture (Sp)** Principles of electricity; wiring of home, farmstead and other agricultural structures; selection of electric motors and their care and application in the broad field of agriculture; lighting and special uses of electricity such as heating and electrical controls. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: Math 1203.

**AGME400V Special Problems (Sp, Su, Fa) (1-6)** Individual research or study in electrification, irrigation, farm power, machinery, or buildings. Prerequisite: Senior standing.

**AGME4011 Senior Seminar (Sp)** For agricultural education, communication and technology majors. Covers how to prepare and present a report on a current topic, job opportunities, and professionalism. Prerequisite: Senior standing.

**AGME402V Special Topics in Agricultural Mechanization (Irregular) (1-4)** Topics not covered in other courses or a more intensive study of special topics in agricultural mechanization.

**AGME4203 Mechanized Systems Management (Fa)** Selection, sizing, and operating principles of agricultural machinery systems, including power sources. Cost analysis and computer techniques applied to planning and management of mechanized systems. Corequisite: Lab component. Prerequisite: Math 1203.

**AGME4973 Irrigation (Sp)** Methods of applying supplemental water to soils to supply moisture essential for plant growth, sources of water, measurement of irrigation water, pumps, conveyance structure, economics, and irrigation for special crops. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: Math 1203.

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### Agricultural Statistics (AGST)

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**AGST400V Special Problems (Sp, Su, Fa) (1-6)** Work on special problems of agricultural statistics or related areas.

**AGST4011 SAS Programming for Agricultural Sciences (Sp, Fa)** An introduction to the SAS programming language with an emphasis on the reading and restructuring of data files, and the displaying of data in tabular and graphic forms. The course is taught using a hands-on approach.

**AGST4023 Principles of Experimentation (Sp, Fa)** Fundamental concepts of experimental and statistical methods as applied to agricultural research. Lecture 3 hours per week. Prerequisite: MATH 1203 or higher level.

**AGST500V Special Problems (Sp, Su, Fa) (1-6)** Individual investigation of a special problem in some area of statistics applicable to the agricultural, food, environmental, and life sciences not available under existing courses. May be repeated for up to 6 hours of degree credit.

**AGST5014 Experimental Design (Sp)** Types of experimental designs, their analysis and application to agricultural research. Lecture 3 hours and laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: AGST 4011 and (AGST 4023 or STAT 4003).

**AGST504V Special Topics (Irregular) (1-4)** Topics not covered in other courses or a broader-based study of specific topics in statis-

tics and related areas. Prerequisite: Graduate standing.

**AGST5713 Applied Regression Analysis for Agricultural Sciences (Fa)** Analysis of agricultural experiments which contain quantitative factors through regression procedures. Lecture 3 hours per week. Prerequisite: AGST 4011 and (AGST 4023 or STAT 4003).

**AGST5803 Case Studies in Biometry (Irregular)** Non-standard statistical problems arising in the agricultural, food, environmental, and life sciences. Prerequisite: STAT 5113 and STAT 5313 or either AGST 5014 or STAT 4373.

**AGST5901 Statistical Consulting Process (Sp)** Examines the components of statistical consulting with emphasis on the interpersonal aspects.

**AGST5913 Statistical Consulting Practicum (Irregular)** Supervised statistical consulting. Prerequisite: STAT 5313 and AGST 5901 or either (AGST 5014 or STAT 4373).

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### Asian Studies (AIST)

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**AIST4003 Asian Studies Colloquium (Fa)** An interdepartmental colloquium with an annual change of subject, required of students in the Asian studies program. Prerequisite: Sophomore standing. May be repeated for up to 6 hours of degree credit.

**AIST4003H Honors Asian Studies Colloquium (Fa)** An interdepartmental colloquium with an annual change of subject, required of students in the Asian studies program. Prerequisite: sophomore standing. May be repeated for up to 6 hours of degree credit.

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### American Studies (AMST)

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**AMST2003 Introduction to American Studies (Fa)** Introduction to American Studies as an interdisciplinary field of study. Examination of a selected topic from various methodological perspectives.

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### Animal Science (ANSC)

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**ANSC1001L Introductory to Animal Sciences Laboratory (Fa)** Study of facilities used in production, processing, and management in animal agriculture. Identification, selection evaluation and testing of livestock, meat, and milk. Laboratory 3 hours per week.

**ANSC1032 Introductory Animal Sciences (Fa)** Students will be introduced to biological sciences associated with modern systems of care and management of livestock. Foundation sciences include topics in genetics, growth and development, physiology, nutrition, animal health, and animal behavior. Course will meet M, T, W, and R for the first eight weeks of the fall semester.

**ANSC1041 Introduction to Companion Animal Industry (Fa)** The importance of companion animals and their allied industries will be discussed. Application of scientific principles to the care and management of companion animals, specifically dogs, cats and horses, will be emphasized. Course will meet on T and R during the second eight weeks of the fall semester.

**ANSC1051 Introduction to the Livestock Industry (Fa)** The importance of livestock and their allied industries will be discussed. Application of scientific principles to the care and management of livestock, specifically beef and dairy cattle, swine, sheep, and goats will be emphasized. Course will meet on M and W during the second eight weeks of the fall semester.

**ANSC2003 Introduction to Equine Industry (Sp)** Examination of careers and business opportunities in the equine industry. Students will gain the opportunity to identify high quality horses through evaluation of conformation and locomotion. Students will also gain skill at oral presentation and be knowledgeable of costs and responsibilities associated with horse ownership.

**ANSC2213 Behavior of Domestic Animals (Fa)** Behavior associated with domestication. Effects of selective breeding, physical and social environments, and developmental stage on social organization, aggressive behavior, sexual behavior, productivity, and training of domestic animals.

**ANSC2252L Introduction to Livestock and Meat Evaluation (Sp)** Develop an understanding between live animal evaluation and carcass composition. Comparative judging including meat evaluation, classification and selection of beef cattle, sheep and swine.

**ANSC2304 Equine Behavior and Training (Fa)** Psychology and ethology of equine social behavior and how it pertains to learning patterns. Application of fundamental behavioral concepts to training of horses. Students will apply classical, practical, and proven equine training techniques to achieve safe, less-traumatic learning for the horse and trainer. Lecture 2 hours and laboratory six hours per week. Prerequisite: Instructor consent.

**ANSC2781 Career Preparation and Development (Fa)** The importance of preparing for a career in the animal sciences and industries will be covered.

**ANSC3003 Applied Animal Parasitology (Odd years, Sp)** The economically important parasites of domestic animals with emphasis on their host relationships and management considerations. Lecture 2 hours, laboratory 2 hours per week. Corequisite:

Lab component.

**ANSC3013 Parasitisms of Domesticated Non-Herbivores (Even years, Sp)** Course will provide applied instruction and

appreciation for the parasitisms of our domesticated swine, chickens, turkeys, dogs and cats.

**ANSC3032 Animal Physiology I (Fa)** Fundamental aspects of neural/muscle/bone tissues and the cardiovascular system. The normal structure and functions of these systems will be emphasized. Lecture 2 hours per week. Prerequisite: BIOL 1543 and CHEM 1123 or CHEM 1074. (Same as POSC 3032)

**ANSC3042 Animal Physiology II (Sp)** Fundamental aspects of renal, respiratory, digestive, and endocrine physiology will be covered. The normal structure and function of these systems will be emphasized. Lecture 2 hours per week. Prerequisite: ANSC 3032 or POSC 3032. (Same as POSC 3042)

**ANSC3123 Principles of Genetics (Fa)** Fundamentals of heredity, with special emphasis on the improvement of farm animals. Lecture 2 hours per week. Prerequisite: BIOL 1543 and MATH 1203 or higher. (Same as POSC 3123)

**ANSC3133 Animal Breeding and Genetics (Sp)** Application of the principles of genetics to the breeding of farm animals. Lecture 3 hours per week. Prerequisite: ANSC 1032 and MATH 1203.

**ANSC3143 Principles of Animal Nutrition (Sp)** Scientific approach to animal nutrition involving the mechanisms through which feed nutrients are utilized by farm animals. Lecture 3 hours per week. Prerequisite: CHEM 1074 and CHEM 1071L.

**ANSC3151L Applied Animal Nutrition Laboratory (Fa)** Practical approach to animal nutrition; use of various methods of feedstuff evaluation and ration balancing for domestic animals. Laboratory 2 hours per week. Corequisite: ANSC 3152. Prerequisite: ANSC 3143 and MATH 1203.

**ANSC3152 Applied Animal Nutrition (Fa)** Practical approach to animal nutrition; physical and chemical composition of feedstuffs, feed processing and preparation, nutrient interactions, and application of nutritional principles to feeding domestic animals. Lecture 2 hours per week. Corequisite: ANSC 3151L. Prerequisite: ANSC 3143 and MATH 1203.

**ANSC3282 Livestock Judging and Selection (Fa)** Comparative judging, including grading, classification, and selection of beef cattle, swine, sheep and horses. Oral and written discussion. Laboratory 6 hours per week. Prerequisite: ANSC 1032 or ANSC 2252L.

**ANSC3291 Livestock Junior Judging Team Activity (Sp)** Training for membership on judging teams, through participation.

**ANSC3333 Diseases of Livestock (Sp)** Introductory study of the diseases of farm animals with emphasis on fundamental principles of disease, body defense mechanisms, hygiene, and sanitation. Corequisite: Lab component. Prerequisite: BIOL 1543.

**ANSC3433 Fundamentals of Reproductive Physiology (Fa)** Principles of mammalian reproductive physiology with emphasis on farm animals. Lecture 3 hours per week. Prerequisite: ANSC 1032 and BIOL 1543.

**ANSC3613 Meat Science (Fa)** The study of meat science and muscle biology. Topics will include animal/tissue growth and development and the relationship to meat quality. Meat processing, preservation, and meat safety concerns will also be considered. Lecture 3 hours per week. Prerequisite: CHEM 2613 or CHEM 3603.

**ANSC3723 Horse and Livestock Merchandising (Fa)** Various types of merchandising programs for specific livestock enterprises will be presented. Students will evaluate the effectiveness of merchandising programs including how to organize, advertise, and manage a purebred auction sale of livestock.

**ANSC3822 Equine Law (Odd years, Fa)** Horse ownership presents unusual, if not unique, legal issues. This course examines the basic underpinnings of commercial transactions in horses, tort liability, business structure, environmental law and gaming regulation.

**ANSC400V Special Problems (Sp, Su, Fa) (1-6)** Special problems in the animal sciences for advanced undergraduate students. May be repeated for up to 6 hours of degree credit.

**ANSC401V Internship in Animal Sciences (Sp, Su, Fa) (1-6)** Supervised work experience with private or government organizations. Prerequisite: Junior standing. May be repeated for up to 6 hours of degree credit.

**ANSC410V Special Topics in Animal Sciences (Irregular) (1-4)** Topics not covered in other courses or a more intensive study of specific topics in animal sciences. Prerequisite: ANSC 1032.

**ANSC4252 Cow-Calf Management (Fa)** Systems of cow-calf management including the practical application of the principles of breeding, feeding, and management to commercial and purebred beef cattle under Arkansas conditions. Lecture 1 hour and laboratory 2 hours per week. Prerequisite: ANSC 1032 and ANSC 3143 and ANSC 3133 and ANSC 3433.

**ANSC4262 Swine Production (Even years, Fa)** Methods in producing purebred and commercial swine with specific emphasis on the management programs needed for profitable pork production in Arkansas. Lecture 1 hour, laboratory 2 hours per week. Corequisite:

Lab component. Prerequisite: ANSC 3133.

**ANSC4272 Sheep Production (Odd years, Sp)** Purebred and commercial sheep management emphasizing the programs of major importance in lamb and wool production in Arkansas. Prerequisite: ANSC 1032 and ANSC 3143 and ANSC 3123.

**ANSC4283 Horse Production (Sp)** Production, use and care of horses and ponies including breeding, feeding, handling, and management. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: ANSC 1032 and ANSC 3433.

**ANSC4291 Livestock Senior Judging Team Activity (Fa)** Training for membership on judging teams, through participation.

**ANSC4452 Milk Production (Sp)** Principles of breeding, feeding, and management of dairy cattle will be reviewed, and course will include field trip touring dairy industry. Prerequisite: ANSC 1032 and ANSC 3143.

**ANSC4482 Companion Animal Management (Fa)** The study and application of principles of domestication, nutrition, reproduction, parasitology, diseases, behavior, and husbandry management to companion animals. Dogs, cats, and exotic animals will be the species of primary interest. Practical problems of care and management of these species will be solved. Prerequisite: BIOL 1543 or equivalent or consent of instructor.

**ANSC4652 Stocker-Feedlot Cattle Management (Sp)** Production and management systems for stocker and feed-lot cattle including practical applications of forage systems, feeding, health management and economics of production of these livestock. The course will include a tour of the stocker and feedlot industry in Arkansas, and surrounding areas. Prerequisite: ANSC 1032 and ANSC 3143 and senior standing.

**ANSC500V Special Problems (Sp, Su, Fa) (1-6)** Work in special problems of animal industry. May be repeated for up to 6 hours of degree credit.

**ANSC5013 Domestic Animal Energetics (Odd years, Sp)** Physical, physiological and biochemical aspects of energy metabolism of domestic animals and their applications to livestock production. Lecture 3 hours per week. Prerequisite: Graduate standing.

**ANSC510V Special Topics in Animal Sciences (Irregular) (1-4)** Topics not covered in other courses or a more intensive study of specific topics in animal sciences. Prerequisite: Graduate standing.

**ANSC5123 Advanced Animal Genetics (Even years, Fa)** Specialized study of animal genetics. Lecture 3 hours per week. Prerequisite: ANSC 3123. (Same as POSC 5123)

**ANSC5133 Quantitative Inheritance (Odd years, Sp)** Advanced study of the genetic basis of variation and the genetic control of quantitative traits in populations. Lecture 3 hours per week. Prerequisite: ANSC 3133.

**ANSC5143 Biochemical Nutrition (Even years, Fa)** Inter-relationship of nutrition and physiological chemistry; structure and metabolism of physiologically significant carbohydrates, lipids, and proteins; integration of metabolism with provision of tissue fuels; specie differences in regulatory control of tissue and whole body metabolism of nutrients. Prerequisite: CHEM 3813. (Same as POSC 5143)

**ANSC5152 Protein and Amino Acid Nutrition (Even years, Sp)** Students will be introduced to the basic processes of protein digestion, amino acid absorption, transport, metabolism, and utilization along with how biochemical function of proteins and their dynamic state affect nutritional status for animals and man. Prerequisite: CHEM 3813. (Same as POSC 5152)

**ANSC5253 Advanced Livestock Production (Irregular)** Comprehensive review of recent advances in research relative to the various phases of livestock production. Prerequisite: ANSC 4252 (or ANSC 4263) and ANSC 3133 (or ANSC 3143).

**ANSC5353 Advanced Hay and Silage Production (Fa)** Advanced study of the principles of good hay and silage production. The course includes a detailed review of forage nutritive value followed by an in-depth discussion of the management of wilting forage crops, silage biochemistry, ensiling characteristics of various forages, silo management, spontaneous heating in hay and silage, dry matter loss, management of stored hay, and changes in forage quality that result from poor conservation of harvested forages. Prerequisite: CSES 3113 and ANSC 3152 and ANSC 3151L.

**ANSC5743L Advanced Analytical Methods in Animal Sciences Laboratory (Fa)** Introduction into theory and application of current advanced analytical techniques used in animal research. Two 3-hour laboratory periods per week. (Same as POSC 5743L)

**ANSC5763 Protozoan Parasites of Domestic Livestock and Companion Animals (Even years, Fa)** Course topics will include economically and medically important protozoan parasites of domestic livestock and companion animals, with an emphasis on their significance for animal and human health. Lecture/discussion 3 hours per week. (Same as POSC 5763)

**ANSC5853 Advanced Meats Technology (Even years, Su)** An intensive study of processed meats, relating the science, technology, and quality of further processed meat and poultry products. Product development, sensory and chemical analysis, microbiology,

nutritional aspects, and product labeling are covered. Prerequisite: POSC 4314 or ANSC 3613.

**ANSC5901 Seminar (Fa)** Critical review of the current scientific literature pertaining to the field of animal science. Oral reports. Lecture 1 hour per week. Prerequisite: Senior standing.

**ANSC5923 Brain & Behavior (Fa)** Course covers cellular through neural systems, major brain functions and comparative neuroanatomy between mammals and birds. Specific topics include coverage of ion channels, membrane potentials, action potentials, synaptic integration, neurotransmitters, major brain regions of mammals and birds, sensory systems and the autonomic nervous system. Lecture 3 hours; Neuroscience Journal Club 1 hour per week (for first 8 weeks of semester). Pre- or Corequisite: CHEM 3813. Corequisite: Drill component. Prerequisite: POSC/ANSC 3032 and POSC/ANSC 3042, or PSYC 2003, or BIOL 2213, or BIOL 2443, or BIOL 2533.

**ANSC5932 Cardiovascular Physiology of Domestic Animals (Fa)** Cardiovascular physiology, including mechanisms of heart function and excitation, and blood vessel mechanisms associated with the circulatory system in domestic animals and poultry. Lecture 3 hours; drill 1 hour per week (for second 8 weeks of semester). Pre- or Corequisite: CHEM 3813. Corequisite: Drill component. Prerequisite: POSC/ANSC 3032 and POSC/ANSC 3042. (Same as POSC 5932)

**ANSC5942 Endocrine Physiology of Domestic Animals (Fa)** Endocrine physiology, including mechanisms of hormone secretion, function, and regulation. Mechanisms associated with the endocrine system will be discussed for domestic animals and poultry. Lecture 3 hours; drill 1 hour per week (or first 8 weeks of semester). Pre- or Corequisite: CHEM 3813. Corequisite: Drill component. Prerequisite: POSC/ANSC 3032 and POSC/ANSC 3042. (Same as POSC 5942)

**ANSC5952 Respiratory Physiology of Domestic Animals (Sp)** Respiratory physiology, including mechanisms of lung function and gas exchange. Mechanisms associated with the interaction of the respiratory system with other bodily systems in domestic animals and poultry will be discussed. Lecture 3 hours; drill 1 hour per week for first 8 weeks of semester. Pre- or Corequisite: CHEM 3813. Corequisite: Drill component. Prerequisite: POSC/ANSC 3032 and POSC/ANSC 3042. (Same as POSC 5952)

**ANSC5962 Gastrointestinal/Digestive Physiology of Domestic Animals (Sp)** Gastrointestinal and hepatic physiology, including mechanisms of digestion, absorption of nutrients with emphasis on cellular control mechanisms in domestic animals and poultry. Lecture 3 hours; drill 1 hour per week (for second 8 weeks of semester). Pre- or Corequisite: CHEM 3813. Corequisite: Drill component. Prerequisite: POSC/ANSC 3032 and POSC/ANSC 3042. (Same as POSC 5962)

**ANSC5972 Renal Physiology (Sp)** Renal physiology, including mechanisms of renal clearance with emphasis on cellular control mechanisms in domestic animals and poultry. Lecture 3 hours; drill 1 hour per week (for second 8 weeks of semester). Pre- or Corequisite: CHEM 3813. Corequisite: Drill component. Prerequisite: POSC/ANSC 3032 and POSC/ANSC 3042. (Same as POSC 5972)

**ANSC600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**ANSC6143 Minerals in Animal Nutrition (Odd years, Sp)** Mineral nutrients, their sources and functions, as related to nutrition of domestic animals. Lecture 3 hours per week. Prerequisite: ANSC 3143 or POSC 4343.

**ANSC6243 Ruminant Nutrition (Odd years, Fa)** Anatomy and physiology of the rumen. The nutrient requirements of microbial organisms and the relation of microbial digestion in the rumen to the nutrition of cattle, sheep and other ruminants. Lecture 3 hours per week. Prerequisite: Graduate standing.

**ANSC6253 Forage-Ruminant Relations (Odd years, Sp)** Advanced chemical, physical, and botanical characteristics of forage plants, the dynamics of grazing, intake and digestion, and techniques of measuring forage utilization and systems analysis at the plant-animal interface. Lecture 3 hours per week. Prerequisite: ANSC 3143 and CSES 3113. (Same as CSES 6253)

**ANSC6343 Vitamin Nutrition in Domestic Animals (Even years, Sp)** The vitamins required by domestic animals with emphasis upon their role in animal nutrition, physiological functions, and consequences of failure to meet the requirement of the animal. Lecture 3 hours per week. Prerequisite: ANSC 3143 (or POSC 4343) and CHEM 3813. (Same as POSC 6343)

**ANSC6833 Reproduction in Domestic Animals (Even years, Sp)** Comprehensive review of current theory of reproductive function in domestic animals. Lecture 3 hours per week. Prerequisite: ANSC 3433.

**ANSC700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Graduate standing.

## Anthropology (ANTH)

**ANTH1011M Honors Introduction to Biological Anthropol-**

**ogy Laboratory (Fa)** Laboratory exercises illustrating concepts of physical anthropology. Corequisite: ANTH 1013.

**ANTH1011L Introduction to Biological Anthropology Laboratory (Fa)** Laboratory exercises illustrating concepts of physical anthropology. Corequisite: ANTH 1013.

**ANTH1013 Introduction to Biological Anthropology (Fa)** An introduction to the field of physical anthropology using human evolution as a unifying concept. Areas include human genetics, race, speciation, primate evolution, and human variation and adaptation. Co- or Prerequisite: ANTH 1011L or ANTH 1011M.

**ANTH1023 Introduction to Cultural Anthropology (Sp, Su, Fa)** Introduction to the nature of culture and its influence on human behavior and personality: comparative study of custom, social organization, and processes of change and integration of culture.

**ANTH1023H Honors Introduction to Cultural Anthropology (Sp, Fa)** Introduction to the nature of culture and its influence on human behavior and personality; comparative study of custom, social organization, and processes of change and integration of culture.

**ANTH2013 Introduction to Latin American Studies (Irregular)** This course provides an interdisciplinary introduction to Latin America. Drawing on Latin American literature, history, sociology, and political science, the course examines the broad forces that have shaped the region. (Same as LAST 2013)

**ANTH3003 World Prehistory (Irregular)** Survey of the prehistoric and early historic cultures of the Americas, Asia, and Africa.

**ANTH3021L Archeology Laboratory (Sp, Fa)** Laboratory exercises illustrating concepts of archeology. Corequisite: ANTH 3023.

**ANTH3023 Approaches to Archeology (Sp, Fa)** Study of the field of archeology including method, theory, analysis and interpretation with substantive worldwide examples. Corequisite: ANTH 3021L.

**ANTH3033 Egyptology (Irregular)** Explores multiple aspects of Ancient Egyptian civilization including chronology, art, religion, literature and daily life. Prerequisite: Junior standing.

**ANTH3123 The Anthropology of Religion (Sp)** An exploration of rituals, symbols, and rules that shape religious life. Religion is viewed broadly, considering activities that invoke powers beyond the reach of ordinary senses. Examining a variety of cultures, we explore what people say and do as they participate in activities such as magic, healing, pilgrimage, and contemporary religious movements.

**ANTH3143 Language and Expressive Culture (Irregular)** This course explores the complex interrelationship of language, culture, and social identity. Verbal art and expressive culture are examined from a variety of anthropological perspectives. Topics include ethnographies of speaking, discourse analysis, cultural performances, and the performative aspects of oral expression. (Same as COMM 3143, ENGL 3143)

**ANTH3163 Male and Female: A Cultural and Biological Overview (Fa)** A comparative study of male and female roles in culture in relation to human biology and socialization.

**ANTH3173 Introduction to Linguistics (Irregular)** Introduction to language study with stress upon modern linguistic theory and analysis. Data drawn from various languages reveal linguistic universals as well as phonological, syntactic, and semantic systems of individual languages. Related topics: language history, dialectology, language and its relation to culture and society, the history of linguistic scholarship. Prerequisite: Junior standing. (Same as COMM 3173, ENGL 3173, WLLC 3173)

**ANTH3213 Indians of North America (Irregular)** Study of the Indians of North America and Mexico emphasizing lifeways at early White contact and subsequent acculturation.

**ANTH3253 Cultures of the South (Sp)** Survey of the diverse ethnic and racial groups of the American South with special emphasis on social and cultural traits related to contemporary developments. (Same as PLSC 3273, SOCI 3253)

**ANTH3263 Indians of Arkansas and the South (Odd years, Sp)** Study of the traditional lifeways and prehistoric backgrounds of Indians living in the Southern United States, including Arkansas.

**ANTH3421L Human Osteology Laboratory (Sp)** Laboratory exercises illustrating concepts of human osteology. Corequisite: ANTH 3423.

**ANTH3423 Human Osteology (Sp)** Study of the human skeleton, identification of bones, allometric growth, sexual dimorphism, osteological genetic inheritance and environmental stresses. Lectures and demonstration. Corequisite: ANTH 3421L.

**ANTH3433 Human Evolution (Sp)** A study of hominid evolution from origin to the present, including trends in comparative primate evolution and functional development of human form as a result of cultural and biological interaction.

**ANTH3443 Criminalistics: Forensic Sciences (Irregular)** Introduction to forensics focused on the scientific analysis of physical and biological evidence encountered in criminal investigations. Chemical, microscopic, biological, and observational techniques employed in the analysis of material evidence are described, discussed, and illustrated within an investigative framework. Topics include inorganic remains, fiber, tissue, human identification, fingerprints, tools, and weapons.

**ANTH3473 North American Prehistory (Irregular)** Survey of the aboriginal prehistory of the North American Continent north of Mexico.

**ANTH3503 Power and Popular Protest in Latin America (Irregular)** This course focuses on the historical formation of Latin America by examining conflicts between the region's rich and poor. It includes both an historical perspective on the formation of ethnic, gender, and class relations in Latin America, and a discussion of contemporary social problems.

**ANTH3523 Gender and Politics in Latin America (Irregular)** This course examines the ways in which political struggles surrounding land, labor, and the environment have been shaped by gender relations in Latin America. Why and how do peasant-workers engage their political worlds and how are such struggles shaped by gender?

**ANTH3533 Medical Anthropology (Irregular)** Survey of the interrelationship of human biology, culture and environment as reflected in disease experience from an evolutionary and cross cultural perspective. Special emphasis on stress.

**ANTH3543 Geographic Information Science (Sp)** Computer assisted analysis and display of geographic resource data. Course develops the theory behind spatial data analysis techniques, and reinforces the theory with exercises that demonstrate its practical applications. Prior experience with computers and/or completion of GEOG 4523 (Computer Mapping) is useful but not a prerequisite. (Same as GEOS 3543)

**ANTH3903 Topics in Anthropology (Irregular)** Covers a special topic or issue. May be repeated for up to 12 hours of degree credit.

**ANTH3923H Honors Colloquium (Irregular)** Covers a special topic or issue, offered as part of the honors program. Prerequisite: honors candidacy (not restricted to candidacy in anthropology).

**ANTH399V Honors Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Junior standing. May be repeated for up to 12 hours of degree credit.

**ANTH4013 History of Anthropological Thought (Fa)** Detailed consideration of anthropological theory through study of its historical development. The research paper in this course fulfills the Fulbright College research paper requirement for anthropology majors.

**ANTH4033 Popular Culture (Irregular)** Study of national and international varieties of popular culture, including music, dance, fashion, and the media. Emphasis will be given to both ethnographic approaches, which focus on the investigation of production and consumption of cultural forms and to cultural studies approaches, which see culture as a terrain of struggle.

**ANTH4063 Women in Africa (Irregular)** Diversity of women's life experiences throughout sub-Saharan Africa will be examined. The class will investigate a range of topics, from marriage and motherhood to prostitution and popular culture. A historical dimension will be present throughout the course, and perspectives from literature and film will also be incorporated. (Same as AAST 4063)

**ANTH4083 African Popular Culture (Irregular)** This class explores popular cultural expression across Africa. Topics range from hip hop and film, to second-hand clothing fashions and the media. We will consider how popular culture, while often inspired by global trends, is rooted in local circumstances and often reflects attempts to grapple with important issues.

**ANTH4093 The Archeology of Death (Irregular)** Study of the analysis and interpretation of archeological mortuary remains and sites. Key archeological and anthropological sources that have influenced major theoretical developments are reviewed.

**ANTH4123 Ancient Middle East (Irregular)** The archeology of the ancient Middle East with emphasis upon the interaction of ecology, technology and social structure as it pertains to domestication and urbanization.

**ANTH4133 Settlements, Sites, and Models (Irregular)** The modeling of potential archaeological resource locations within regions receives significant resources and funding from government and private sectors. The theoretical and methodological basis behind such models is examined, as are the history, controversies, key issues, individuals, and the important role of GIS technology and statistical methods. Prerequisite: ANTH 4543 or GEOG 4543 or ANTH 4553 or GEOG 4553.

**ANTH4143 Ecological Anthropology (Irregular)** Anthropological perspectives on the study of relationships among human populations and their ecosystems.

**ANTH4183 Global Politics of Food (Irregular)** This course explores the politics of food production, processing, transportation, and consumption on a global level. (Same as PLSC 4523)

**ANTH4243 Archeology of the Midsouth (Irregular)** Survey of prehistoric and protohistoric cultures of the lower Mississippi Valley and adjacent regions. Prerequisite: Junior standing.

**ANTH4256 Archeological Field Session (Su)** Practical field and laboratory experiences in archeological research. May be repeated for up to 12 hours of degree credit.

**ANTH4263 Identity and Culture in the U.S.-Mexico**

**Borderlands (Irregular)** An exploration of the interplay between Latino/a, Mexican, Anglo, and Native American identities and cultures along the U.S.-Mexico border. Course examines identity formation, hybridity, social tension, marginalization, race and gender, from an anthropological perspective, paying special attention to the border as theoretical construct as well as material reality.

**ANTH4353 Laboratory Methods in Archeology (Irregular)** Theory and practice of describing, analyzing, and reporting upon archeological materials.

**ANTH4363 Museums, Material Culture, and Popular Imagination (Fa)** Museums as ideological sites and thus as sites of potential contestation produce cultural and moral systems that legitimate existing social orders. This course will focus on strategies of representation and the continuous process of negotiating social and cultural hierarchies with and through objects that are displayed.

**ANTH4443 Cultural Resource Management I (Sp)** Concentrated discussion of management problems relative to cultural resources, including review and interpretation of relevant federal legislation, research vs. planning needs, public involvement and sponsor planning, and assessment of resources relative to scientific needs. No field training involved; discussion will deal only with administrative, legal and scientific management problems.

**ANTH448V Individual Study of Anthropology (Sp, Su, Fa) (1-6)** Reading course for advanced students with special interests in anthropology. May be repeated for up to 6 hours of degree credit.

**ANTH4513 African Religions: Gods, Witches, Ancestors (Irregular)** An exploration of African religions from a variety of anthropological perspectives, exploring how religious experience is perceived and interpreted by adherents, highlighting the way in which individual and group identities are constructed, maintained and contested within religious contexts. Readings reflect the vast diversity of religious life in Africa.

**ANTH4523 Dental Science (Fa)** Introduction to the study of the human dentition including its anatomy, morphology, growth and development, and histology.

**ANTH4533 Middle East Cultures (Sp)** Study of the peoples and cultures of the Middle East; ecology, ethnicity, economics, social organizations, gender, politics, religion, and patterns of social change. May be repeated for up to 9 hours of degree credit.

**ANTH4553 Introduction to Raster GIS (Fa)** Theory, data structures, algorithms, and techniques behind raster-based geographical information systems. Through laboratory exercises and lectures multidisciplinary applications are examined in database creation, remotely sensed data handling, elevation models, and resource models using Boolean, map algebra, and other methods. (Same as GEOS 4553)

**ANTH4563 Vector GIS (Sp)** Introduction to geographic information systems (GIS) applications in marketing, transportation, real estate, demographics, urban and regional planning, and related areas. Lectures focus on development of principles, paralleled by workstation-based laboratory exercises using Arc-node based software and relational data bases. (Same as GEOS 4583)

**ANTH4583 Peoples and Cultures of Sub-Saharan Africa (Fa)** An exploration of the people and places of Africa from a variety of anthropological perspectives. Classic and contemporary works will be studied in order to underscore the unity and diversity of African cultures, as well as the importance African societies have played in helping us understand culture/society throughout the world.

**ANTH4593 Introduction to Global Positioning Systems (Sp)** Introduction to navigation, georeferencing, and digital data collection using GPS receivers, data loggers, and laser technology for natural science and resource management. Components of NavStar Global Positioning system are used in integration of digital information into various GIS platforms with emphasis on practical applications. (Same as GEOS 4593)

**ANTH4603 Landscape Archaeology (Fa)** This course provides an introduction to the methods and theories of landscape archaeology. Topics include archaeological survey techniques, environmental and social processes recorded in the archaeological landscape, and analysis of ancient settlement and land use data to reveal changes in population, resource utilization, and environmental relationships.

**ANTH4613 Primate Adaptation and Evolution (Fa)** Introduction to the biology of the order of Primates. This course considers the comparative anatomy, behavioral ecology and paleontology of our nearest living relatives. Prerequisite: ANTH 1013 (or BIOL 1543 and BIOL 1541L). (Same as BIOL 4613)

**ANTH4633 Archeological Prospecting & Remote Sensing (Odd years, Fa)** Ground-based geophysical, aerial, and other remote sensing methods are examined for detecting, mapping, and understanding archeological and other deposits. These methods include magnetometry, resistivity, conductivity, radar, aerial photography, thermography, and multispectral scanning. Requires computer skills, field trips, and use of instruments.

**ANTH4653 Advanced Raster GIS (Irregular)** Advanced raster topics are examined beginning with a theoretical and methodological review of Tomlin's cartographic modeling principles. Topics vary and

include Fourier methods, image processing, kriging, spatial statistics, principal components, fuzzy and regression modeling, and multi-criteria decision models. Several raster GIS programs are examined

with links to statistical analysis software. Prerequisite: ANTH 4553 or GEOS 4553.

**ANTH4803 Historical Archeology (Irregular)** Review of the development of historical archeology and discussion of contemporary theory, methods, and substantive issues. Lab sessions on historic artifact identification and analysis.

**ANTH4813 Ethnographic Approaches to the Past (Irregular)** Review of the uses of ethnographic data in the reconstruction and interpretation of past cultures and cultural processes, with particular emphasis on the relationships between modern theories of culture and archeological interpretation.

**ANTH4863 Quantitative Anthropology (Irregular)** Introductory statistics course for anthropology students examines probability theory, nature of anthropological data, data graphics, descriptive statistics, probability distributions, test for means and variances, categorical and rank methods, ANOVA, correlation and regression. Lectures focus on theory methods; utilize anthropological data and a statistical software laboratory. (Same as GEOS 4863)

**ANTH4903 Seminar in Anthropology (Irregular)** Research, discussion, and projects focusing on a variety of topics. May be repeated for up to 12 hours of degree credit.

**ANTH4913 Topics of the Middle East (Irregular)** Covers a special topic or issue. May be repeated for up to 9 hours of degree credit.

**ANTH4923 Karl Marx: Life, Work, and Legacy (Irregular)** This course examines the writings of Karl Marx. Students will read and discuss his major works, including Capital, The German Ideology, and Grundrisse. In order to understand Marx's writing, students will also explore his life, times, and legacy. (Same as PLSC 4923)

**ANTH500V Advanced Problems in Anthropology (Sp, Su, Fa) (1-18)** Individual research at graduate level on clearly defined problems or problem areas. May be repeated for up to 18 hours of degree credit.

**ANTH5043 Advanced Vector Geographic Information Systems (Irregular)** Advanced vector operations and analysis. Topics will include topological analysis, network analysis, geocoding, conflation, implications of source and product map scale, map generation, error mapping, and cartographic production. Prerequisite: (ANTH 4563 or GEOS 4583) or equivalent. (Same as ENDY 5033, GEOS 5033)

**ANTH5053 Quaternary Environments (Fa)** An interdisciplinary study of the Quaternary Period including dating methods, deposits, soils, climates, tectonics, and human adaptation. Lecture 2 hours, laboratory 2 hours per week. (Same as ENDY 5053, GEOS 5053)

**ANTH5103 Applications of Cultural Method and Theory (Fa)** Review of the nature and history of cultural anthropology; recent theories and practical implications and applications of various methods of acquiring, analyzing and interpreting cultural anthropological data.

**ANTH5113 Anthropology of the City (Irregular)** Examines cities as both products of culture, and sites where culture is made and received. Explores the implications of several pivotal urban and cultural trends and the way in which representations of the city have informed dominant ideas about city space, function, and feel.

**ANTH5153 Topics in Anthropology (Irregular)** Graduate level seminar with varied emphasis on topics relating to cultural anthropology.

**ANTH5203 Applications of Archeological Method and Theory (Fa)** Review of the nature and history of archeology; recent theories and practical implications and applications of various methods of acquiring, analyzing, and interpreting archeological data.

**ANTH5263 Indians of Arkansas and the South (Odd years, Sp)** Study of the traditional lifeways and prehistoric backgrounds of Indians living in the southern United States, including Arkansas.

**ANTH5303 Applications of Method and Theory in Biological Anthropology (Irregular)** Review of the nature and history of biological anthropology; recent theories and the practical implications and applications of various methods of acquiring, analyzing, and interpreting data.

**ANTH535V Topics in Physical Anthropology (Irregular) (1-6)** Graduate level seminar with varied emphasis on topics relating to physical anthropology.

**ANTH5413 Bioarcheological Seminar (Even years, Sp)** Intensive coverage of bioarcheological method and theory with the context of both academic and cultural resources management research.

**ANTH5423 Human Evolutionary Anatomy (Irregular)** Paleobiologists reconstruct past lifeways and systematic relationships of our ancestors using comparative studies of bony morphology and associated soft tissues. This course surveys methods and theories used to infer function and phylogeny, and details relevant aspects of the anatomy of humans, living great apes, and fossil human ancestors. Prerequisite: ANTH 1013 and BIOL 1543. (Same as BIOL 5423)

**ANTH5443 Cultural Resource Management I (Irregular)**

Concentrated discussion of management problems relative to cultural resources, including review and interpretation of relevant federal legislation, research vs. planning needs, public involvement and sponsor planning, and assessment of resources relative to scientific needs. No field training involved; discussion will deal only with administrative, legal, and scientific management problems.

**ANTH561V Field Research in Archeology (Irregular) (1-6)** Directed graduate level archeological fieldwork. May be repeated for up to 6 hours of degree credit.

**ANTH5633 Advanced Archaeological Prospecting (Irregular)** This course offers advanced training in applications of archaeological geophysics. Emphasis is placed on theory, instrument handling, uses of advanced software, and the interpretation of data from five principal methods: magnetometry, electrical resistivity, electromagnetic induction, ground-penetrating radar, and thermal infrared imaging. Prerequisite: ANTH 4633.

**ANTH600V Master's Thesis (Sp, Su, Fa) (1-6)**

**ANTH6033 Society and Environment (Sp)** This course examines the complex interrelationships between human societies and the natural environment. Drawing on diverse and interdisciplinary perspectives in archaeology, ethnography, history, geography, and palaeo-environmental studies, readings and discussion will explore the co-production of social and environmental systems over time. (Same as ENDY 6033)

**ANTH610V Internship (Sp, Su, Fa) (1-18)** May be repeated for up to 18 hours of degree credit.

**ANTH6813 Seminar: Cultural Anthropology (Irregular)** Variable topics in Anthropology will be explored in depth. May be repeated for up to 9 hours of degree credit.

**ANTH6823 Seminar: Archeology (Irregular)** Various topics in Archeology will be explored in depth. May be repeated for up to 9 hours of degree credit.

**ANTH6833 Seminar: Biological Anthropology (Irregular)** Various topics in Biological Anthropology will be explored in depth. May be repeated for up to 9 hours of degree credit.

**ANTH700V Doctoral Dissertation (Sp, Fa) (1-18)**

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## Arabic (ARAB)

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**ARAB1016 Intensive Arabic I (Fa)** Equivalent to 1003 and 1013. Stresses correct pronunciation, aural comprehension, and simple speaking ability. Basic grammar is taught inductively through oral and written skills.

**ARAB2013 Intermediate Arabic II (Sp)** Continued development of speaking, comprehension, reading, and writing. Emphasizes morphology and syntax.

**ARAB2016 Intensive Arabic II (Sp)** Equivalent to 2013. Leads to greater oral comprehension and speaking ability and develops the more advanced reading and writing skills. Emphasizes morphology and syntax.

**ARAB3016 Intensive Arabic III (Fa)** Leads to greater facility in the spoken language and continues to develop reading and writing skills. Continued emphasis on morphology and syntax. Prerequisite: ARAB 2016.

**ARAB4016 Intensive Arabic IV (Sp)** Continued development of speaking, comprehension, reading, writing. Reading assignments introduce a variety of styles ranging from classical to modern in both prose and verse.

**ARAB4023 Advanced Arabic I (Irregular)** Development of advanced speaking and writing skills. Extensive reading and writing assignments and translating exercises from English into Arabic. Prerequisite: ARAB 4016.

**ARAB4033 Advanced Arabic II (Irregular)** Continued advanced speaking, reading, and writing skills. Prerequisite: ARAB 4023.

**ARAB4053 Arabic Readings (Irregular)** Develops skill in description, analysis, and argumentation through weekly reading and writing assignments within a workshop atmosphere. Selected readings from various styles of standard Arabic, ranging from newspapers to literary texts.

**ARAB470V Special Topics (Irregular) (1-6)** May be offered in a topic not specifically covered by courses otherwise listed.

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## Architecture (ARCH)

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**ARCH1003 Basic Course in the Arts: Architecture**

**Lecture (Sp, Fa)** Introduction to architecture, emphasizing the origins and development of architecture and objective criteria for its evaluation. For the general student. May not be presented towards satisfaction of major requirements in either the B.Arch. or B.A. in architectural studies degrees.

**ARCH1003H Honors Basic Course in the Arts: Architecture Lecture (Sp)** Introduction to architecture, emphasizing the origins and development of architecture and objective criteria for its evaluation. For the general student. May not be presented towards satisfaction of major requirements in either the B.Arch. or B.A. in

architectural studies degrees.

**ARCH1011 Leadership By Design I (Fa)** Introduces time management, study strategies, promotes solutions for maintaining personal health, and develops communication and leadership skills intended to benefit education, career, and the community.

**ARCH1013 Diversity and Design (Fa)** Explores the reciprocal relationship between diversity and design in America, investigating how race, gender, religion, ability, age, class, and location affect and are affected by the design of media, products, architecture, and cities/regions. Positive and negative effects of diversity and design are discussed.

**ARCH1013H Honors Diversity and Design (Fa)** Explores the reciprocal relationship between diversity and design in America, investigating how race, gender, religion, ability, age, class, and location affect and are affected by the design of media, products, architecture, and cities/regions. Positive and negative effects of diversity and design are discussed.

**ARCH1014 Architectural Design I (Sp, Fa)** Seeing, drawing: analysis and graphic communication. Subject and object: expression and craft. Studio and seminars 12 hours per week. Corequisite: ARCH 1212.

**ARCH1021 Leadership by Design II (Sp)** Introduces time management, study strategies, promotes solutions for maintaining personal health, and develops communication and leadership skills intended to benefit education, career, and the community. Continuation of ARCH 1011.

**ARCH1024 Architectural Design II (Sp, Su)** Ideation, visualization, representation. Project sequence designed to develop perceptual and conceptual abilities; formal and spatial composition and synthesis. Studio and seminars 12 hours per week. Corequisite: ARCH 1222. Prerequisite: ARCH 1014.

**ARCH1212 Design Methods I (Sp, Fa)** Interdisciplinary introduction to basic principles of design, from furniture and the room to buildings and the natural landscape. Urbanism and the public realm. Lecture 1 hour per week. Corequisite: ARCH 1014.

**ARCH1222 Design Methods II (Sp, Su)** Theoretical, formal, and constructive principles and their impact in the design disciplines, modernism and after. Introduction to the intellectual and philosophical foundations of design theory. Lecture 1 hour per week. Corequisite: ARCH 1024. Prerequisite: ARCH 1212.

**ARCH2016 Architectural Design III (Fa)** Introduction of formal principles and strategies used in space making, focusing on the development of plans and sections. Precedents and the understanding of them through analysis and syntheses are used as a means of examining the past and the present while providing a framework from which personal design sensibilities can evolve. Corequisite: ARCH 2114 and ARCH 2233. Prerequisite: ARCH 1024.

**ARCH2026 Architectural Design IV (Sp)** An elaboration of space-making, addressing three-dimensional aspects of form-making, including the influence of structural systems, articulation of the vertical section, and exterior expression; the role of site as a generator of form; and the overarching importance of technics, including the materiality of space, structure, and light. Corequisite: ARCH 2124. Prerequisite: ARCH 2016.

**ARCH2114 Architecture Technology I (Fa)** Introduction to the fundamentals of building systems technology. Emphasis on the interrelationships of site, environmental, structure, and enclosure systems. Focus on the integration of all systems within the conceptual and functional organization of the building and its context. Corequisite: ARCH 2016. Prerequisite: ARCH 1024 and ARCH 1222.

**ARCH2114H Honors Architecture Technology I (Fa)** Introduction to the fundamentals of building systems technology. Emphasis on the interrelationships of site, environmental, structure, and enclosure systems. Focus on the integration of all systems within the conceptual and functional organization of the building and its context. Corequisite: ARCH 2016. Prerequisite: ARCH 1024 and ARCH 1222.

**ARCH2124 Architecture Technology II (Sp)** Study of force systems, section properties, equilibrium and stability of building structures. Relationship of material properties and structural member behavior to the forces acting on the building structural system. Specific topics are: stress/strain relationships of various materials; types of stress; shear and moment diagrams; design and analysis of simple wood and steel framing systems; introduction to indeterminate structures; and use of structural analysis computer programs. Three hours of lecture and one hour of laboratory exercises in principles and practices of architectural technology each week. Corequisite: ARCH 2026. Prerequisite: ARCH 2114 and PHYS 1044.

**ARCH2124H Honors Architecture Technology II (Sp)** Study of force systems, section properties, equilibrium and stability of building structures. Relationship of material properties and structural member behavior to the forces acting on the building structural system. Specific topics are: stress/strain relationships of various materials; types of stress; shear and moment diagrams; design and analysis of simple wood and steel framing systems; introduction to indeterminate structures; and use of structural analysis computer programs.

grams. Three hours of lecture and one hour of laboratory exercises in principles and practices of architectural technology each week. Corequisite: ARCH 2026. Prerequisite: ARCH 2114 and PHYS 1044.

**ARCH2233 History of Architecture I (Fa)** Critical study and analysis of world architecture from ancient times through the Middle Ages, comprising the ancient Americas, Asia, Mesopotamia, and Egypt; Classical, Byzantine, and Islamic architecture and vernacular design; and the early Christian, Romanesque, and Gothic periods.

**ARCH2233H Honors History of Architecture I (Fa)** Critical study and analysis of world architecture from ancient times through the Middle Ages, comprising the ancient Americas, Asia, Mesopotamia, and Egypt; Classical, Byzantine, and Islamic architecture and vernacular design; and the early Christian, Romanesque, and Gothic periods.

**ARCH2243 History of Architecture II (Sp)** Critical study and analysis of world architecture from the fifteenth to the mid-nineteenth centuries. Encompasses early modern Europe (Renaissance, Baroque, and Neoclassical) as well as two or more of the following: colonial New Spain, early modern Japan, and/or early modern Islamic empires in Africa, the Middle East, and Asia. Vernacular American building is surveyed as well as architecture in the nineteenth-century, including Beaux-Arts design and the introduction of industrial materials. Prerequisite for architecture majors only: ARCH 2233.

**ARCH2243H Honors History of Architecture II (Sp)** Critical study and analysis of world architecture from the fifteenth to the mid-nineteenth centuries. Encompasses early modern Europe (Renaissance, Baroque, and Neoclassical) as well as two or more of the following: colonial New Spain, early modern Japan, and/or early modern Islamic empires in Africa, the Middle East, and Asia. Vernacular American building is surveyed as well as architecture in the nineteenth-century, including Beaux-Arts design and the introduction of industrial materials. Prerequisite for architecture majors only: ARCH 2233.

**ARCH2993 Art and Culture in Italy (Sp, Fa)** The evolution of culture and aesthetics and their immediate relationship with the creation of Italy's masterpieces in art and architecture. Includes site visits and lectures. Offered in the Rome study abroad semester.

**ARCH3016 Architectural Design V (Fa)** Emphasis on issues of design process, exploration of internal and external determinants of form and the integration of appropriate technologies in design solutions. Corequisite: ARCH 3134. Prerequisite: ARCH 2026.

**ARCH3026 Architectural Design VI (Sp)** Studio-based analysis and design of structural and enclosure systems for buildings with particular emphasis on systems interface and application within the context of design exercises. Investigations of the appropriate use of materials and assemblies for varied programmatic and environmental criteria. Twelve hours of studio each week. Prerequisite: ARCH 3016.

**ARCH303V Special Projects (Irregular) (1-6)** Individual or group investigation in research, visual communication, history, or design concerning special interests of student or faculty.

**ARCH303VH Honors Special Projects (Irregular) (1-6)** Individual or group investigation in research, visual communication, history, or design concerning special interests of student or faculty.

**ARCH3134 Architectural Technology III (Fa)** Emphasis on structural, mechanical, plumbing, electrical, fire protection, natural and electric lighting systems and environmental considerations of energy usage, code requirements, and system selection and integration. Three hours lecture and one hour laboratory exercises in principles and practices of architectural technology each week. Corequisite: ARCH 3016. Prerequisite: ARCH 2124.

**ARCH3134H Honors Architectural Technology III (Fa)** Emphasis on structural, mechanical, plumbing, electrical, fire protection, natural and electric lighting systems and environmental considerations of energy usage, code requirements, and system selection and integration. Three hours lecture and one hour laboratory exercises in principles and practices of architectural technology each week. Corequisite: ARCH 3016. Prerequisite: ARCH 2124.

**ARCH3743 Furniture Design (Irregular)** Design concepts and techniques to acquaint the student with the design of furniture; analysis of function, development of design and construction of small pieces of furniture.

**ARCH4016 Architectural Design VII (Fa)** Emphasis on issues of typology, context and technological suitability as sources of theoretical and developmental responses. Prerequisite: ARCH 3026.

**ARCH4023 Advanced Architectural Studies (Sp, Fa)** Advanced seminars in subjects to special interest to students and faculty.

**ARCH4023H Honors Advanced Architectural Studies (Sp, Fa)** Advanced seminars in subjects to special interest to students and faculty.

**ARCH4026 Architectural Design VIII (Sp)** Continuation of Architectural Design VII. Prerequisite: ARCH 4016.

**ARCH4116 Architectural Design - Rome (Sp, Fa)** Investigation of complex design problems in the context of the city of Rome, utilizing advanced issues in architectural design and planning.

**ARCH4126 Architectural Design Mexico (Su)** Introduces a complex social and physical urban condition through a process of formal analysis and design executed in Mexico City, augmented by an intense graphic investigation of urban form encountered through related field trips to the distinct cultural and geographic regions of Mexico.

**ARCH4154 Architectural Technology V (Sp, Fa)** Introduction to high-rise, specialty and contemporary structural systems. Computer analysis of structural systems. Advanced detailing and integration of building systems. Study of acoustics and intelligent building systems. Introduction to organization, preparation, and context of construction drawings. Three hours lecture and one hour laboratory exercises in principles and practices of architectural technology each week.

**ARCH4154H Honors Architectural Technology V (Sp, Fa)** Introduction to high-rise, specialty and contemporary structural systems. Computer analysis of structural systems. Advanced detailing and integration of building systems. Study of acoustics and intelligent building systems. Introduction to organization, preparation, and context of construction drawings. Three hours lecture and one hour laboratory exercises in principles and practices of architectural technology each week.

**ARCH4433 History of Architecture III (Fa)** Critical study and analysis of the history and theories of modern architecture from the mid-nineteenth century to the present. Prerequisite: ARCH 2233 and ARCH 2243.

**ARCH4433H Honors History of Architecture III (Fa)** Critical study and analysis of the history and theories of modern architecture from the mid-nineteenth century to the present. Prerequisite: ARCH 2233 and ARCH 2243.

**ARCH4483 Architecture of the Americas (Irregular)** Study of the development of architecture in the Americas from the Pre-Columbian cultures to the present day. Lecture and slides 3 hours per week.

**ARCH4483H Honors Architecture of the Americas (Irregular)** Study of the development of architecture in the Americas from the Pre-Columbian cultures to the present day. Lecture and slides 3 hours per week.

**ARCH4523 Architectural Theory (Sp)** Introduction to architectural theories and their relationship to modern historiography. Case studies are employed for the critical evaluation of significant texts and the discernment of concepts embedded in textual structures. Reading theory through established historical categories establishes critical insight to the original deployment, negation and resurfacing of architectural theories. Prerequisites: ARCH 2233, ARCH 2243, and ARCH 4433.

**ARCH4553 Modern Architecture in Mexico (Su)** Overview of the emergence, growth and trends that define the ongoing evolution of modern architecture in Mexico from the first decades of the 20th century to contemporary practice. Offered in the Mexico study abroad semester.

**ARCH4610 Architecture Cooperative Education I (Irregular)** A practicum which introduces and engages the student in the practice and application of the profession. Prerequisite: completion of all third year program requirements, 2.5 minimum GPA and permission of the faculty.

**ARCH4653 Architecture of the City (Sp, Fa)** Analysis of Rome's urban form and historical and theoretical information in support of the students' experience. Includes site visits and lectures. Offered in the Rome study abroad semester.

**ARCH4723H Honors Architectural Research Methods (Fa)** Investigation into the practical, theoretical, and methodological strategies necessary for embarking upon architectural inquiry and discourse at a sophisticated level, for instance, in the form of a year-long thesis or independent project. Practical issues of method, such as research skills, literature review, and argument analysis are examined. The classic range of tools for interpreting architecture are surveyed from single-cause explanations (e.g., formalism) to more recent multi-causal theories (e.g., Semiotics, Deconstruction, Post-colonial theory, etc.) for architectural design. Prerequisite: ARCH 2233, ARCH 2243, and ARCH 4433.

**ARCH5016 Degree Project I (Sp)** Degree project development dependent upon the synthesis of knowledge and application of critical thinking addressing architectural issues at multiple scales.

**ARCH5016H Honors Degree Project I (Sp)** Degree project development dependent upon the synthesis of knowledge and application of critical thinking addressing architectural issues at multiple scales.

**ARCH5026 Degree Project II (Su)** Degree project resolution including demonstrated skill in generating design ideas supported by clear understanding of issues resulting in comprehensive development and presentation of architectural issues at multiple scales. Prerequisite: ARCH 5016.

**ARCH5026H Honors Degree Project II (Su)** Degree project resolution including demonstrated skill in generating design ideas supported by clear understanding of issues resulting in comprehensive



sive development and presentation of architectural issues at multiple scales. Prerequisite: ARCH 5016.

**ARCH5253 Architectural Structures Seminar (Irregular)** Advanced discussion, investigation, design, and analysis of structural systems, forms, and materials as determinants of architectural design. May be repeated for up to 6 hours of degree credit.

**ARCH5314 Architectural Professional Practice (Fa)** Study of role and responsibility of the architect, owner, and contractor relationships; professional ethics; organization of the architect's office; contracts and other documents; risk management strategies; and the preparation of the technical specifications and bidding documents of the Project Manual. Prerequisite: ARCH 4026.

**ARCH5493 History of Urban Form (Irregular)** The city is explored as the primary context for design practice and theory. A few themes, e.g., the struggle between internal and external determinants of form, will frame the examination of exemplary urban projects. Primary focus on Classical through Baroque periods, tracing precedents from these periods into contemporary practice. Prerequisite: ARCH 2233 and ARCH 2243 and ARCH 4433.

**ARCH5933 Preservation and Restoration (Irregular)** History of the preservation and restoration movement in Europe and the U.S.; its relation to the contemporary urban planning and renewal. Modern economic and administrative techniques of preservation. Participation in history surveys at regional and state levels. Prerequisite: ARCH 2233, ARCH 2243, and ARCH 4433.

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### Art Education (ARED)

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**ARED3603 Public School Art for Elementary Schools (Sp, Fa)** Selection, preparation, and use of instructional materials for art in the elementary school. Artistic development of the child and implications to learning in art and other academic areas. Prerequisite: ARTS 1003 and ARHS 1003 and admission to teacher education.

**ARED3613 Public School Art I (Irregular)** Selection, preparation and use of instructional materials in elementary and secondary schools. For students seeking teaching certification in art. Prerequisite: ARTS 1013 and ARTS 1313 and ARTS 1323 and ARTS 2013.

**ARED3643 Teaching Art in Elementary Schools (Fa)** Methods and materials used in teaching elementary school art. Prerequisite: ARED 3613.

**ARED3653 Teaching Art in Secondary Schools (Sp)** Methods and materials used in teaching secondary school art. Prerequisite: ARED 3603 or ARED 3613.

**ARED4633 Individual Research in Art Education (Sp, Fa)** Independent study in specific areas of art education. Prerequisite: 6 hours of art education.

**ARED476V Student Teaching in Art (Sp, Fa) (6-12)** A minimum of 6 weeks will be spent in an off-campus school. During this time the student teacher will have an opportunity under supervision to observe, to teach and participate in other activities involving the school and community. Prerequisite: BFA degree in Art Education.

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### Art History (ARHS)

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**ARHS1003 Basic Course in the Arts: Art Lecture (Sp, Su, Fa)** A general introduction to the visual arts. Lectures on theory and criticism, demonstrations, films, and slides. Three hours a week plus attendance at specified programs and exhibits. May not be presented toward satisfaction of the B.A. fine arts requirement by art majors.

**ARHS1003H Honors Basic Course in the Arts: Art Lecture (Irregular)** A general introduction to the visual arts. Lectures on theory and criticism, demonstrations, films, slides. Three hours a week plus attendance at specified programs and exhibits. May not be presented toward satisfaction of the B.A. fine arts requirement by art majors.

**ARHS2913 Art History Survey I (Fa)** Survey of art works from Stone Age through Medieval.

**ARHS2923 Art History Survey II (Sp)** Survey of art works from Renaissance to the present.

**ARHS4813 The History of Photography (Irregular)** Survey of photography from 1685 to present.

**ARHS4823 History of Graphic Design (Irregular)** Survey of graphic design history from 1850 to the present. Prerequisite: ARHS 2923.

**ARHS4833 Ancient Art (Irregular)** Study of selections from the visual arts of Mesopotamia, Egypt, Greece, or Rome. Prerequisite: ARHS 2913.

**ARHS4833H Honors Ancient Art (Irregular)** Study of selections from the visual arts of Mesopotamia, Egypt, Greece, or Rome. Prerequisite: ARHS 2913.

**ARHS4843 Medieval Art (Irregular)** Study of Early Christian, Byzantine, Early Medieval, Romanesque, and Gothic styles. Prerequisite: ARHS 2913.

**ARHS4843H Honors Medieval Art (Irregular)** Study of Early Christian, Byzantine, Early Medieval, Romanesque, and Gothic styles. Prerequisite: ARHS 2913.

**ARHS4853 Italian Renaissance Art (Irregular)** Study of

Proto-Renaissance, Early, High Renaissance, and Mannerist styles in Italy. Prerequisite: ARHS 2923.

**ARHS4853H Honors Italian Renaissance Art (Irregular)** Study of Proto-Renaissance, Early, High Renaissance, and Mannerist styles in Italy. Prerequisite: ARHS 2923.

**ARHS4863 Northern Renaissance Art (Irregular)** Study of Late Gothic and Renaissance styles in the Netherlands, Germany, and France. Prerequisite: ARHS 2923.

**ARHS4863H Honors Northern Renaissance Art (Irregular)** Study of Late Gothic and Renaissance styles in the Netherlands, Germany, and France. Prerequisite: ARHS 2923.

**ARHS4873 Baroque Art (Irregular)** Study of art styles of the 17th and 18th centuries, primarily in Italy, Spain, France, Flanders, and the Netherlands. Prerequisite: ARHS 2923.

**ARHS4873H Honors Baroque Art (Irregular)** Study of art styles of the 17th and 18th centuries, primarily in Italy, Spain, France, Flanders, and the Netherlands. Prerequisite: ARHS 2923.

**ARHS4883 19th Century European Art (Even years, Fa)** Study of Neo-Classical, Romanticist, Realist, Impressionist, and Post-Impressionist styles. Prerequisite: ARHS 2923.

**ARHS4883H Honors 19th Century European Art (Even years, Fa)** Study of Neo-Classical, Romanticist, Realist, Impressionist, and Post-Impressionist styles. Prerequisite: ARHS 2923.

**ARHS4893 20th Century European Art (Odd years, Sp)** Study of the major styles and movements of the century, including Cubism, Fauvism, German Expressionism, and Surrealism. Prerequisite: ARHS 2923.

**ARHS4893H Honors 20th Century European Art (Odd years, Sp)** Study of the major styles and movements of the century, including Cubism, Fauvism, German Expressionism, and Surrealism. Prerequisite: ARHS 2923.

**ARHS4913 American Art to 1900 (Odd years, Fa)** The visual arts in the United States from their beginning in Colonial times through the nineteenth century. Prerequisite: ARHS 2923.

**ARHS4913H Honors American Art to 1900 (Odd years, Fa)** The visual arts in the United States from their beginning in Colonial times through the nineteenth century. Prerequisite: ARHS 2923.

**ARHS4923 American Art Since 1900 (Even years, Sp)** The visual arts in the United States from the turn of the century to the contemporary era. Prerequisite: ARHS 2923.

**ARHS4923H Honors American Art Since 1900 (Even years, Sp)** The visual arts in the United States from the turn of the century to the contemporary era. Prerequisite: ARHS 2923.

**ARHS4933 Seminar in Contemporary Art (Irregular)** Study of styles and major trends in the visual arts since 1945. Prerequisite: ARHS 2923 and ARHS 4923.

**ARHS4943 Seminar in Art Criticism (Fa)** Study and problems in the criticism of art forms and styles. Prerequisite: 9 hours of art history.

**ARHS4943H Honors Seminar in Art Criticism (Fa)** Study and problems in the criticism of art forms and styles. Prerequisite: 9 hours of art history.

**ARHS4963 Individual Research in Art History (Sp, Fa)** Independent study in specific areas of art history and criticism. Prerequisite: 12 hours of Art History.

**ARHS4963H Honors Individual Research in Art History (Sp, Fa)** Independent study in specific areas of art history and criticism. Prerequisite: 12 hours of Art History.

**ARHS4983 Special Topics in Art History (Irregular)** Subject matter not covered in regularly offered courses, and relating to the history of art before the nineteenth century. Prerequisite: ARHS 2913 or ARHS 2923. May be repeated for up to 6 hours of degree credit.

**ARHS6933 Graduate Research in Art History (Sp)** Independent study in specific areas of art history and criticism.

**ARHS6943 Seminar: Critical Thought in Art (Fa)** Explore topics of concern to the studio artist involving underlying concepts and purposes of art as well as models and methods for the analysis of art. Course based on discussions of selected readings, prepared papers and seminar reports. Prerequisite: graduate standing. May be repeated for up to 3 hours of degree credit.

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### Arts and Sciences (ARSC)

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**ARSC1001 Fulbright Perspectives (Fa)** Open to incoming freshman and transfer students participating in the university's First Year Experience. Available for credit only.

**ARSC300V Study Abroad (Sp, Su, Fa) (1-15)** Open to undergraduate students studying abroad in officially sanctioned programs. May be repeated for up to 24 hours of degree credit.

**ARSC310V Cooperative Education (Sp, Su, Fa) (1-4)** Required of participants in cooperative education work assignments. Available for credit only. May be repeated for up to 36 hours of degree credit.

**ARSC500V Study Abroad (Sp, Su, Fa) (1-6)** Open to graduate students studying abroad in officially sanctioned programs. May be repeated for up to 24 hours of degree credit.

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### Art (ARTS)

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**ARTS1003 Basic Course in the Arts: Art Studio (Sp, Su, Fa)** Provides experience through participation in the arts.

**ARTS1013 Drawing Fundamentals I (Sp, Fa)** Problems dealing with materials and techniques of drawing, including basic concepts of line, perspective, and value.

**ARTS1313 Two-Dimensional Design (Sp, Fa)** Studio problems in the use of line, shape, texture, value, and color and their relationships.

**ARTS1323 Three-Dimensional Design (Sp, Fa)** Studio problems with the elements of three-dimensional design: structure, space, form, surface, and their relationship.

**ARTS2003 Drawing Fundamentals II (Sp, Fa)** Continuation of Drawing Fundamentals. Prerequisite: ARTS 1013.

**ARTS2013 Figure Drawing I (Sp, Fa)** Continuation of drawing fundamentals with emphasis upon human figure studies. Prerequisite: ARTS 1013.

**ARTS2313 Computer Applications in Art (Sp, Fa)** Introduction to digital imaging in the visual arts. Beginning instruction in digital image creation, manipulation and processing. Introduction to input and output peripherals, computer graphic software programs and work in the digital visual arts. Prerequisite: ARTS 1313.

**ARTS3023 Drawing III (Fa)** Advanced studies and problems in drawing techniques and materials. Prerequisite: ARTS 2003 and ARTS 2013.

**ARTS3103 Painting I (Sp, Fa)** An exploration of different ways of articulating visual forms on a picture plane, using common materials and procedures. Pre- or Corequisite: ARTS 1313 and ARTS 2013 or ARCH 1025.

**ARTS3113 Painting II (Sp, Fa)** An expanded use of materials, procedures, subject matter, and approaches. Prerequisite: ARTS 3103.

**ARTS3123 Painting: Water Media (Sp)** Introductory course presenting basic materials and techniques of watercolor, gouache, and acrylic painting. Form and composition to be studied through observation and imagination. Traditional techniques as well as experimentation and personal expression are to be explored. Prerequisite: ARTS 1013 and ARTS 1313 and ARTS 1323.

**ARTS3133 Figure Painting (Sp)** Introduction to representational and interpretive figure painting and to contemporary issues in figurative painting. The model as well as other visual sources will be used as a basis for observation, interpretation and invention. Prerequisites: ARTS 2013, ARTS 3103.

**ARTS3203 Sculpture I: Fundamentals of Modeling, Carving & Casting (Fa)** An introduction to fundamental additive and subtractive sculpture techniques and methods of seeing and working that give expression to material form. Beginning techniques in modeling, carving, mold-making, and basic casting are demonstrated.

Lectures, readings, and critiques will develop student awareness of traditional building techniques which inform contemporary sculpture practices. Prerequisite: ARTS 1313 and ARTS 1323 and ARTS 2013.

**ARTS3213 Sculpture II: Construction Methods & Alternative Media (Sp)** A focus on material sensitivity through thoughtful and skillful additive approaches. Woodworking as well as construction techniques in alternative media are introduced as tools to examine structural and spatial possibilities. Through examining and questioning the interplay of form, material, technique, and content, students will further develop their own critique skills. Prerequisite: ARTS 3203.

**ARTS3333 Color Studies (Fa)** Investigation of color qualities and relationships through research and studio problems. Prerequisite: ARTS 1313 and ARTS 1323 and ARTS 2013.

**ARTS3363 Graphic Design I (Sp, Fa)** An overview of design principles and the application of design processes to posters, logos, stationery, and publication design. Conceptual development and visual and technical problem solving skills are emphasized. Prerequisite: ARTS 1013 and ARTS 2313.

**ARTS3403 Etching I (Sp)** Introduction to intaglio and relief. Prerequisite: ARTS 1313 and (ARTS 2003 or ARTS 2013 or ARTS 2023).

**ARTS3413 Etching II (Sp)** Advanced work in intaglio or relief. Students select one area for study. Intaglio emphasizes working with copper plates and color printing. Background in color studies preferred but not mandatory. Prerequisite: ARTS 3403 or ARTS 3463.

**ARTS3423 Printmaking-Lithography (Fa)** Introduction to lithography with emphasis on stone lithographic techniques. Prerequisite: ARTS 1313 and (ARTS 2003 or ARTS 2013 or ARTS 2023).

**ARTS3433 Lithography II (Fa)** Advanced study with emphasis on color printing and plate lithography techniques. Prerequisite: ARTS 3423.

**ARTS3443 Serigraphy I (Su)** Introduction to serigraphy techniques, including cut stencil, resist methods, and photosensitized screens. Some knowledge of photography preferred, but not mandatory. Prerequisite: ARTS 1313 and (ARTS 2003 or ARTS 2013 or ARTS 2023).

**ARTS3453 Serigraphy II (Su)** Continuation of the study and use

of serigraphy techniques. Prerequisite: ARTS 3443.

**ARTS3463 Introduction to Printmaking (Su)** Introduces the student to printmaking through primary methods used in relief, serigraphic, intaglio, and lithographic techniques. Prerequisite: ARTS 1013 and (ARTS 2003 or ARTS 2013 or ARTS 2023).

**ARTS3503 Ceramics: Handbuilding I (Fa)** This is an introductory course in ceramic sculpture focusing on basic handbuilding techniques and basic ceramic processes including clay mixing, glaze mixing, and low temperature gas and electric firing techniques. Pre- or Corequisite: ARTS 1013 and ARTS 1313 and ARTS 1323.

**ARTS3523 Ceramics: Wheelthrowing I (Sp)** This is an introductory course in ceramics focusing on basic functional wheelthrowing techniques and basic ceramic processes including clay mixing, glaze mixing, and low-temperature gas and electric firing techniques. Pre- or Corequisite: ARTS 1013 and ARTS 1313 and ARTS 1323.

**ARTS3533 Ceramics: Wheelthrowing II (Fa)** This course is an intermediate course in wheelthrowing and some handbuilding. A primary emphasis is on clay body and glaze calculation, and understanding the processes of firing low, high, and atmospheric kilns. Prerequisite: ARTS 3503 and ARTS 3523.

**ARTS3543 Ceramics: Slip-Casting (Sp)** This is an intermediate course in ceramic sculpture focusing on concept based object making. The techniques taught are mold-making and slip-casting, along with an advanced understanding of clay mixing, glaze mixing, low and high temperature gas, salt/soda, and electric firing techniques. Prerequisite: ARTS 3503 and ARTS 3523.

**ARTS3803 Photography I (Sp, Fa)** Beginning photography. Introduction to B & W materials, techniques, and theory. Development of visual ideas through assignments, critiques, slide lectures, and demonstrations. Prerequisite: ARTS 1313.

**ARTS3813 Alternative Photographic Processes (Sp, Su, Fa)** Advanced B & W materials, techniques, and theory. Introduction to "non-traditional" materials, techniques, and theory (Cyanotype, Van Dyck Brownprint, Gum Biochromate, KWIK-PRINT, etc.). Assignments, critiques, slide lectures, and demonstrations. Prerequisite: ARTS 3803.

**ARTS4023 Figure Drawing II (Irregular)** Advanced study of the figure with emphasis on figure structure and its relationship to pictorial form in drawing. Prerequisite: ARTS 2013.

**ARTS404V Special Problems in Drawing (Sp, Su, Fa) (1-6)** Individual projects in drawing arranged with the instructor. Prerequisite: ARTS 3023. May be repeated for up to 6 hours of degree credit.

**ARTS4143 Painting III (Sp, Fa)** Concentration of the coordination of the technical, aesthetic, and creative aspects of painting. Prerequisite: ARTS 3113.

**ARTS4163 Painting IV (Sp, Fa)** Continued advanced concentration on the coordination of the technical, aesthetic, and creative aspects of painting. Prerequisite: ARTS 4143. May be repeated for up to 6 hours of degree credit.

**ARTS417V Special Problems in Painting (Sp, Fa) (1-6)** Individual technique and subject matter projects to be arranged with the instructor. Prerequisite: ARTS 4143 or ARTS 4153. May be repeated for up to 6 hours of degree credit.

**ARTS4213 Mixed Media & Spatial Context (Irregular)** An exploration in assemblage, installation, environmental art, light, and kinetics as they apply to contemporary sculptural language. Specific problems utilizing various media are preceded by readings, lectures, and demonstrations. Prerequisite: ARTS 3203.

**ARTS4223 Advanced Sculpture (Irregular)** A directed analysis of form and its relationship to content based on the development of work in students' medium of choice. Students will acquire the technical skills needed to meet personal vision through guidance of the instructor. Research evidenced in work, discussions, and critiques is emphasized. Prerequisite: ARTS 3203 and ARTS 3213.

**ARTS423V Special Problems in Sculpture (Sp, Fa) (1-6)** Individual projects in sculpture with emphasis on materials exploration. Prerequisite: ARTS 4223. May be repeated for up to 6 hours of degree credit.

**ARTS4333 Bookmaking (Irregular)** Introduction to the creation of unique, limited edition artist's bookworks -- with emphasis on technical knowledge and conceptual understanding of the book form as a means of artistic expression.

**ARTS4343 Advanced Design (Sp)** Studio problems in the inter-relationships of two and three-dimensional elements in traditional, experimental, and digital media. Prerequisite: ARTS 1313 and ARTS 1323 and ARTS 2313.

**ARTS435V Special Problems in Design (Sp, Fa) (1-6)** Extended problems in an area of interest in pure or functional design; encouraged use of imaginative materials. Prerequisite: ARTS 4343. May be repeated for up to 6 hours of degree credit.

**ARTS4363 Graphic Design Typography (Irregular)** Studies include type as form, typographic contrast principles, legibility, text organization and hierarchy, and experimental approaches to typographic design. Overview of typographic history is included. Current computer software applications utilized. Prerequisite: ARTS 3363.

**ARTS4373 Graphic Design: Symbols (Irregular)** Emphasis

on the development of logos, pictograms, symbols, and conceptual symbolism, with a study of the history of symbol generation. Current computer software applications utilized. Prerequisite: ARTS 3363.

**ARTS4383 Graphic Design: Layout (Irregular)** Advanced explorations of organizational principles and design processes applied to print media. Contemporary design practices and graphic design history are studied. Current computer software applications utilized. Prerequisite: ARTS 3363.

**ARTS439V Special Problems in Graphic Design (Sp, Fa) (1-6)** Advanced individual projects in graphic design. Prerequisite: Any 4000 level ARTS visual design course except ARTS 4343. May be repeated for up to 6 hours of degree credit.

**ARTS4463 Etching III (Sp, Fa)** Continued study of intaglio or relief. Prerequisite: ARTS 3413.

**ARTS4473 Lithography III (Fa)** Continued advanced study of lithography techniques. Prerequisite: ARTS 3433.

**ARTS4483 Printmaking IV (Sp, Fa)** Continued advanced study in various printmaking media. Prerequisite: ARTS 4463 or ARTS 4473.

**ARTS4573 Advanced Ceramics (Sp, Fa)** This is an advanced course where any ceramic technique can be used. The course continues advanced study of glaze and clay calculation, and kiln design, building, and firing. Prerequisite: ARTS 3503 and ARTS 3523 and ARTS 3533 and ARTS 3543. May be repeated for up to 6 hours of degree credit.

**ARTS458V Special Problems in Ceramics (Sp, Fa) (1-3)** Individual projects in ceramic techniques. Prerequisite: ARTS 3503 or ARTS 3523. May be repeated for up to 6 hours of degree credit.

**ARTS459V Individual Instruction (Sp, Fa) (1-6)** Special projects on an arranged basis for advanced students in any area of art in which the catalog sequence of courses has been completed. May be repeated for up to 6 hours of degree credit.

**ARTS4613 Visual Design: Web I (Fa)** This course introduces students to the World Wide Web and the technologies and practices involved in creating a successful Web presence. Discussions include interactivity, usability and accessibility with an emphasis on handcoding standards-based XHTML and cascading style sheets and a special attention to graphic design standards. Prerequisite: ARTS 3363.

**ARTS4623 Visual Design: Web II (Sp)** This course will study advanced techniques in creating successful Web sites, including information architecture, SHTML and cascading style sheets, Web animation, digital photography, sequential storytelling and actual client work. Experimentation in concept, style and format are encouraged as students scrutinize the limitations and potential of design for the World Wide Web. Prerequisite: ARTS 4613.

**ARTS4653 Elements of Animation (Fa)** This course explores the fundamentals of sequential imaging and storytelling from traditional methods through modern animation software. Computer based projects will make use of digital and video cameras, video editing software, Web animation software and a 3D animation package. Prerequisites: ARTS 1013, ARTS 1313, ARTS 2313.

**ARTS4663 Visual Design: Motion Design (Irregular)** In this course, students will explore motion graphic design as it combines 2D and 3D animation, typography, video footage photography and sound. The projects will explore elements of storytelling, moving compositions and animation principles that focus on Web and DVD delivery, using mainly Adobe Premier and After Effects. Prerequisite: ARTS 4653.

**ARTS469V Special Problems In Interactive Design (Sp, Fa) (1-6)** Students work on special projects on an individual basis with instructor, exploring innovative interface design, in-depth projects potentially exploring solutions to and awareness of social issues, with various types of media, from DVD and digital video to Web and motion graphics. Cross-discipline collaboration is encouraged. Prerequisites: ARTS 4613 and ARTS 4623 and ARTS 4653. May be repeated for up to 6 hours of degree credit.

**ARTS4813 Digital Photography (Irregular)** Introduction to digital photography production, techniques and theory. Digital input from scanning (flatbed & slide/negative), digital cameras, video and internet sources. Computer assisted manipulation of imagery for correction and abstraction. Output to a digital printing systems, analog systems (film recorder), servers and Internet. Prerequisite: ARTS 3803.

**ARTS4823 Color Photography I (Irregular)** Introduction to color production. Color materials, techniques and theory. Direct reversal transparencies and prints, color negative processing and printing, and manipulation of color materials. Assignments, demonstrations, critiques, and lectures. Prerequisite: ARTS 3803.

**ARTS4833 Advanced Photography (Fa)** Individual problems in photography with optional study in areas of color, slide production, and photography application to other art media. Prerequisite: ARTS 3803.

**ARTS484V Special Problems in Photography (Sp, Fa) (1-6)** Individual instruction for advanced undergraduates and graduate students. Special projects in photography designated by students in collaboration with faculty. Prerequisite: ARTS 3803 and (ARTS

3813 or ARTS 4823 or ARTS 4833). May be repeated for up to 6 hours of degree credit.

**ARTS4853 Documentary Photography (Irregular)** This course will introduce students to a variety of methods used in the area of documentary photography in order to give them the conceptual and technical skills necessary to create extended projects that focus on documenting and visually exploring subjects in an in-depth manner. Prerequisite: ARTS 3803.

**ARTS490V Honors Thesis (Sp, Fa) (1-6)** Special problems in studio, art history, art criticism, art education, or a combination of these. Prerequisite: junior standing. May be repeated for up to 12 hours of degree credit.

**ARTS491V Internships in Art (Sp, Su, Fa) (1-3)** Credit for practical experience gained through internships in studio art, art history, gallery practices and/or art education. Report required from intern and field supervisor on significant accomplishments and/or progress. Prerequisite: junior standing and art major. May be repeated for up to 6 hours of degree credit.

**ARTS4921 Senior Portfolio Review (Sp, Fa)** Capstone course. A portfolio of creative work and supporting artist statement will be prepared and presented to the Art faculty in a formal presentation. Prerequisite: Art Majors only. Requires junior, senior or graduate standing.

**ARTS493V Fine Arts Gallery Internship (Sp, Su, Fa) (1-3)** Study all aspects of operating the Fine Arts Gallery. Research and preparation for exhibitions, organize and install exhibits, care of art works, create and distribute publicity, arrange interviews with newspapers, and other media.

**ARTS494V Graphic Design Internship (Sp, Su, Fa) (1-6)** Credit for practical experience gained through internship in graphic design. Report required from intern and field supervisor on progress and significant accomplishments. 3 credit hours per semester. Prerequisite: Any 4000 level ARTS visual design course except ARTS 4343. May be repeated for up to 6 hours of degree credit.

**ARTS495V Special Topics (Irregular) (1-6)** May be offered in a subject not specifically covered by the courses otherwise listed. May be repeated for up to 6 hours of degree credit.

**ARTS498V Senior Thesis (Sp, Su, Fa) (1-6)**

**ARTS5013 Graduate Drawing (Fa)** Graduate level study of drawing materials and techniques. Prerequisite: Graduate standing.

**ARTS5901 Graduate Critique (Sp, Su, Fa)** Art faculty review and critique of M.F.A. student's art works. Prerequisite: Admission into the M.F.A. program.

**ARTS5912 Graduate Seminar in Studio Art (Sp, Fa)** Examination and analysis of current issues in contemporary visual art. The relationship of current theoretical literature to studio practice will be explored through presentations and discussions of graduate student research. Prerequisite: Admission to MFA program.

**ARTS601V Master of Fine Arts Exhibition (Sp, Su, Fa) (1-6)** Production and presentation of a one person exhibition of art work. The M.F.A. candidate will be responsible for making three acceptable slide sets of the exhibition and exhibition statements. Prerequisite: M.F.A. candidacy.

**ARTS602V Graduate Drawing (Sp, Su, Fa) (1-6)** Individual problems in drawing techniques. Prerequisite: Graduate standing.

**ARTS612V Graduate Painting (Sp, Su, Fa) (1-6)** Individual problems in painting techniques. Prerequisite: Graduate standing.

**ARTS622V Graduate Sculpture (Sp, Su, Fa) (1-6)** Individual problems in sculpture techniques. Prerequisite: Graduate standing.

**ARTS632V Graduate Design (Sp, Su, Fa) (1-6)** Individual problems in two and three dimensional design. Prerequisite: Graduate standing.

**ARTS642V Graduate Printmaking (Sp, Su, Fa) (1-6)** Individual problems in printmaking techniques. Prerequisite: Graduate standing.

**ARTS652V Graduate Ceramics (Sp, Su, Fa) (1-6)** Individual problems in ceramic techniques. Prerequisite: Graduate standing.

**ARTS682V Graduate Photography (Sp, Su, Fa) (1-6)** Individual problems in photography. Prerequisite: Graduate standing.

**ARTS692V Special Studio Problems (Irregular) (1-6)** Individual problems in studio areas on arranged basis. Prerequisite: Graduate standing.

**ARTS695V Special Topics (Irregular) (1-6)** Subject matter not covered in other courses. Prerequisite: Graduate standing. May be repeated for up to 12 hours of degree credit.

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## Astronomy (ASTR)

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**ASTR2001M Honors Survey of the Universe Laboratory**

(Fa) An introduction to the content and fundamental properties of the cosmos. Topics include planets and other objects of the solar system, the sun, normal stars and interstellar medium, birth and death of stars, neutron stars, and black holes. Pre- or Corequisite: ASTR 2003 or ASTR 2003H.

**ASTR2001L Survey of the Universe Laboratory (Sp, Su, Fa)** Daytime and nighttime observing with telescopes and indoor

exercises on selected topics. Pre- or Corequisite: ASTR 2003.

**ASTR2003 Survey of the Universe (Sp, Su, Fa)** An introduction to the content and fundamental properties of the cosmos.

Topics include planets and other objects of the solar system, the Sun, normal stars and interstellar medium, birth and death of stars, neutron stars, pulsars, black holes, the Galaxy, clusters of galaxies, and cosmology. Corequisite: ASTR 2001L or ASTR 2001M.

**ASTR2003H Honors Survey of the Universe (Fa)** An introduction to the content and fundamental properties of the cosmos.

Topics include planets and other objects of the solar system, the Sun, normal stars and interstellar medium, birth and death of stars, neutron stars, pulsars, black holes, the Galaxy, clusters of galaxies, and cosmology. Corequisite: ASTR 2001M. May be repeated for up to 3 hours of degree credit.

**ASTR301V Observational Astronomy (Irregular) (1-3)**

Individual experimental or observational problems studied with small telescopes, cameras, and other basic equipment. No credit is given toward a B.S. degree in physics. Prerequisite: ASTR 2003 or ASTR 3003.

**ASTR3033 Solar System Astronomy (Irregular)** Basic course on state of knowledge of solar system astronomy, especially designed for students in B.A. Physics program or as an elective for undergraduates in related areas. Prerequisite: PHYS 2033 and PHYS 2031L or PHYS 2074.

**ASTR4013 Astrophysics (Even years, Sp)** Introduction to astrophysics for seniors. The course covers stellar evolution, interstellar medium, galactic nucleogenesis and observational cosmology. Prerequisite: PHYS 3614 or CHEM 3504.

**ASTR5013 Astrophysics (Odd years, Fa)** Introduction to astrophysics. The course covers stellar evolution, interstellar medium, galactic nucleogenesis and observational cosmology. Prerequisite: PHYS 3614 or CHEM 3504.

**ASTR5033 Planetary Systems (Fa)** The nature of the solar system and other planetary systems as deduced from observations and theoretical modeling. Structure and evolution of terrestrial and Jovian planets and their satellites. Planetary atmospheres, magnetospheres, and the solar wind; planetary interiors. Theoretical and observed properties of exoplanetary systems; astrobiology.

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### Biological Engineering (BENG)

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**BENG1012 Biological Engineering Design Fundamentals (Irregular)**

Introduction to the profession of Biological Engineering including a definition, and demonstration through field trips, guest speakers, examples of job opportunities and internships. Basic engineering methodologies, including analysis and design, as applied to biological systems. Introduction to problem solving, data analysis, report writing, presentations, and engineering record keeping. Group activities and team design efforts. Lecture 1 hour, laboratory 3 hours per week. Corequisite: Lab component.

**BENG1022 Biological Engineering Design Studio I (Irregular)**

Practice of biological engineering design in the Biological Engineering Design Studio. Design projects explore the unique problems associated with engineering applied to biological systems. Group activities to teach teamwork skills in the context of engineering practice, including reporting, project management, time management, communication and balancing individual and team accountability. Introduction and application to a computer aided graphics package. Lecture 1 hour, laboratory 3 hours per week. Prerequisite: BENG 1012 or GNEG 1103. Corequisite: Lab component.

**BENG2612 Biological Engineering Design Studio II (Fa)**

Applications of biology, chemistry and physics to the design of life support for enclosed biological systems involving people, animals, plants and microbes. Design process will be based upon engineering analyses such as quantifying bio-energetics and growth, energy and mass balances, solar energy and use of watershed modeling tools. Student teams will be presented multiple design modules that include literature/experimental discovery, open-ended design and prototype testing. 4 hours of design studio per week. Prerequisite: GNEG 1121. Pre- or Corequisite: PHYS 2054, BIOL 1543/1541L.

**BENG2622 Biological Engineering Design Studio III (Sp)**

Continuation of BENG 2612. Design Studio experience includes additional life support system design modules. Design process will include discussion of social issues and ethics, use of engineering economics as a tool to evaluate design alternatives. Use of descriptive statistics and regression to analyze experimental data. Improve written and oral communication skills through presentation of design project results. 4 hours of design studio per week. Prerequisite: BENG 2612.

**BENG3213 Biomedical Engineering: Emerging Methods and Applications (Sp)**

Introductory course for undergraduate biomedical engineering students. Emerging biomedical engineering methods including: tissue engineering, stem cell engineering, biomedical nanotechnology, medical imaging and biosensing, single molecule imaging, biomarker discovery and proteomics, gene therapy, drug delivery, and protein engineering. Design of components for tissue

engineering processes, nanodrug delivery and nanotechnology based disease detection. Lecture 3 hours per week. Prerequisite: BIOL 2533. Pre- or Corequisite: BENG 3723.

**BENG3712 Engineering Properties of Biological Materials (Fa)**

Measuring and predicting the physical, chemical, and biological properties of biological materials necessary for the analysis and design of production and processing systems. Lecture 2 hours per week. Prerequisite: BENG 2622.

**BENG3723 Unit Operations in Biological Engineering (Sp)**

Designs of basic unit operations typical of biological engineering practice; unit operations include pump-pipe, fan-duct, moist air (psychrometric) processes (cool/heater/humidifier/dryer), air mixing, aeration, and refrigeration; unit operations design will account for unique constraints imposed by biological systems. Lecture 2 hours and lab 3 hours per week. Corequisite: Lab component. Prerequisite: (MEEG 2403 or CHEG 2313) and (CVEG 3213 or CHEG 2133 or MEEG 3503).

**BENG3733 Transport Phenomena in Biological Systems (Fa)**

Applications of the principles of kinetics and heat and mass transfer to the analysis and design of biological engineering processes. Biological engineering processes will encompass examples in the realms of biotechnology, ecological, and biomedical engineering. Lecture 3 hours per week. Prerequisite: MATH 3404 and BENG 3723. Pre- or Corequisite: CHEM 3813.

**BENG3803 Mechanical Design in Biological Engineering (Sp)**

Introduction to the mechanical design process applied to biological engineering, with examples of mechanical components interfacing with biological systems. Engineering properties of materials, loading, combined stress analysis, theories of failure. Systems approach in design, including safety, reliability and cost. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: MEEG 3013.

**BENG4104 Electronic Instrumentation for Biological Systems (Sp)**

Theory and advanced applications of analog circuits, digital circuits, and commercial instruments involving biological materials and systems. Lecture 3 hours, laboratory 3 hours per week. Prerequisite: PHYS 2074.

**BENG4104H Honors Electronic Instrumentation for Biological Systems (Sp)**

Theory and advanced applications of analog circuits, digital circuits, and commercial instruments involving biological materials and systems. Lecture 3 hours, laboratory 3 hours per week. Prerequisite: PHYS 2074.

**BENG4113 Risk Analysis for Biological Systems (Odd years, Fa)**

Principles of risk assessment including exposure assessment, dose response, and risk management. Methods of risk analysis modeling and simulation with computer software. Applications of risk analysis in medical, animal, food and environmental systems. Prerequisite: MATH 2564 and BIOL 2013.

**BENG4123 Biosensors & Bioinstrumentation (Odd years, Sp)**

Principles of biologically based sensing elements and interfacing techniques. Design and analysis methods of biosensing and transducing components in bioinstrumentation. Applications of biosensors and bioinstrumentation in bioprocessing, bioenvironmental, biomechanical and biomedical engineering. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: BIOL 2013 and BENG 4103.

**BENG4133 Digital Remote Sensing and GIS (Irregular)**

Basic digital image processing techniques and geo-spatial analysis applied to monitoring of natural processes and resources. Course topics include introduction to electromagnetic radiation, concept of color, remote sensing systems, and light attenuation by atmosphere, objects and sensors. Advanced topics include data models, spectral transforms, spatial transforms, correction and calibration, geo-rectification, and image classification with hyperspectral and multi-spectral images acquired with aerial and satellite sensors. Raster GIS is integrated into the course throughout the semester. Will use software such as ENVI, ArcGIS and ArcView. Lecture 2 hours, lab 3 hours per week.

**BENG4203 Biomedical Engineering Principles (Fa)**

Engineering principles applied to the design and analysis of systems affecting human health. This is an introductory course focusing on fundamentals of physiological systems and modeling and how this relates to analysis and equipment design. Topics include: brief overview of anatomy and physiology; bioelectric phenomena, physiological modeling, cardiovascular system, biomechanics, computational biology. Requires a background in circuits, fluid dynamics, mechanics, biology, and chemistry. Lecture 3 hours per week. Prerequisite: MEEG 2013, (MEEG 2403 or CHEG 2313), ELEG 2103, (MEEG 3503 or CVEG 3213 or CHEG 2133), MEEG 3013, BIOL 1543 or equivalents.

**BENG4223 Numerical Methods in Biomedical Engineering (Sp)**

Application of mathematical techniques and numerical methods for analyzing biological data and solving biological problems. The emphasis will be computer simulation and mathematical modeling applications in biomedical engineering. Prerequisite: MATH 3404.

**BENG4283 Electronic Response of Biological Tissues (Irregular)**

Understand the electric and magnetic response of biological tissues with particular reference to neural and cardiovascular systems. Passive and active forms of electric signals in cell communication. We will develop the central electrical mechanisms from the membrane channel to the organ, building on those excitation, dielectric models for tissue behavior, Debye, Cole-Cole models. Role of bound and free water on tissue properties. Magnetic response of tissues. Experimental methods to measure tissue response. Applications to Electrocardiography & Electroencephalography, Microwave Medical Imaging, RF Ablation will be discussed that are common to many electrically active cells in

the body. Analysis of Nernst equation, Goldman equation, linear cable theory, and Hodgkin-Huxley Model of action potential generation and propagation. High frequency response of tissues to microwave. Prerequisites: ELEG 3703 or equivalent; MATH 3404 or equivalent; basic biology. (Same as ELEG 4773)

**BENG450V Special Problems (Sp, Su, Fa) (1-4)** Selected problems in biological engineering are pursued in detail. Prerequisite: senior standing. May be repeated for up to 4 hours of degree credit.

**BENG451VH Honors Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Honors candidacy.

**BENG452V Special Topics in Biological Engineering (Irregular) (1-6)**

Special topics in biological engineering not covered in other courses. May be repeated for up to 8 hours of degree credit.

**BENG4703 Biotechnology Engineering (Fa)**

Introduction to biotechnology topics ranging from principles of microbial growth, mass balances, bioprocess engineering as well as emerging principles in the design of biologically based microbial and enzymatic production systems. Application areas such as biofuels, and fine and bulk chemical production. Lecture 2 hours, laboratory 3 hours per week. Prerequisite: BENG 2622. Corequisite: Lab component.

**BENG4813 Senior Biological Engineering Design I (Fa)**

Design concepts for equipment and processes used in biological, food and agricultural industries. Initiation of comprehensive two-semester team-design projects; defining design objectives, developing functional/mechanical criteria, standards, reliability, safety, ethics and professionalism issues. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: consent of instructor. Prerequisite: BENG 3723. Pre- or Corequisite: BENG 3733.

**BENG4822 Senior Biological Engineering Design II (Sp)**

Continuation of BENG 4813. Design concepts for equipment and processes used in biological and agricultural industries. Completion of 2-semester team design projects. Construction, testing, and evaluation of prototypes. Written and oral design reports. Discussion of manufacturing methods, safety, ergonomics, analysis/synthesis/design methods as appropriate for particular design projects. Laboratory/design 4 hours per week. Prerequisite: BENG 4813.

**BENG4903 Watershed Eco-Hydrology (Sp)**

Engineering principles involved in assessment and management of surface water flow and hydrologic processes within ecosystems. Includes frequency analysis of rainfall, infiltration, runoff, evapotranspiration. Use of GIS/mathematical models to quantify hydrologic processes at the watershed-landscape scale. Design/implementation of best management practices and ecological engineering principles and processes for advanced ecological services. Lecture 3 hours per week. Prerequisite: CVEG 3213.

**BENG4923 Ecological Engineering Design (Fa)**

Design of low impact development techniques to enhance ecological services, reduce peak runoff, and capture sediments, nutrients and other pollutants resulting from urban development. Techniques may include: bio-swales, retention basins, and filter strips. Design of sustainable ecological processes for the treatment and utilization of wastes/residues. Techniques may include: direct land application to soils/crops, composting systems, lagoons and constructed wetlands. Design goals include optimization of ecological services to maintain designated uses of land, water and air, including enhancement of habitat for wildlife and recreation, and the discovery of economically viable methods for coexistence of urban and agricultural land uses. Lecture 3 hours per week. Prerequisite: BENG4903.

**BENG500V Advanced Topics in Biological Engineering (Irregular) (1-6)**

Special problems in fundamental and applied research. Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**BENG5103 Advanced Instrumentation in Biological Engineering (Even years, Sp)**

Applications of advanced instrumentation in biological systems. Emphasis on updated sensing and transducing technologies, data acquisition and analytical instruments. Lecture 2 hours, lab 3 hours per week. Corequisite: Lab component. Prerequisite: BENG 4103.

**BENG5113 DIGITAL Remote Sensing and GIS (Irregular)**

Basic digital image processing techniques and geo-spatial analysis applied to monitoring of natural processes and resources. Course topics include introduction to electromagnetic radiation, concept of color, remote sensing systems, and light attenuation by atmosphere, objects and sensors. Advanced topics include data models, spectral

transforms, spatial transforms, correction and calibration, georectification, and image classification with hyperspectral and multi-spectral images acquired with aerial and satellite sensors. Raster GIS is integrated into course throughout the semester. Will use software such as ENVI, ArcGIS and ArcView. Requires a class project in the student's area of interest. Lecture 2 hours, lab 3 hours per week. Students may not earn credit for both BENG 5113 and BENG 4133. Corequisite: Lab component. Prerequisite: MATH 3404.

**BENG5203 Mathematical Modeling of Physiological Systems (Sp)** Application of mathematical techniques to physiological systems. The emphasis will be on cellular physiology and cardiovascular system. Cellular physiology topics include models of cellular metabolism, membrane dynamics, membrane potential, excitability, wave propagation and cellular function regulation. Cardiovascular system topics include models of blood cells, oxygen transport, cardiac output, cardiac regulation, and circulation. Background in biology and physiology highly recommended. Lecture 3 hours per week. Prerequisite: MATH 3404.

**BENG5213 Introduction to Bioinformatics (Odd years, Sp)** Application of algorithmic techniques to the analysis and solution of biological problems. Topics include an introduction to molecular biology and recombinant DNA technology, biological sequence comparison, and phylogenetics, as well as topics of current interest. (Same as CSCE 5213)

**BENG5223 Biomedical Engineering Research Internship (Sp, Su, Fa)** Minimum six-week program (possibly up to several months) in a medical research environment working on an original engineering research project. Possible specialty areas include Anaesthesiology, Cardiology, Informatics, Ophthalmology, Orthopedic Surgery, and Radiology. Prerequisite: Graduate standing and approval of co-ordinator.

**BENG5233 Tissue and Cell Engineering (Fa)** This course introduces students to biological, engineering and clinical aspects of tissue and cell engineering. The introduction to stem cells and histology are reinforced with a concomitant lab that introduces cell culture techniques and illustrates functional and structural aspects of various biological tissues. Topics include Cell Signaling, Transport and Kinetics, Scaffolds, Surface Interactions, Drug Delivery, and Clinical, Ethical and Regulatory Considerations. Two to three lecture hours per week plus three lab hours per week. Corequisite: lab component. Prerequisite: MATH 3404 and CHEM 3813.

**BENG5243 Biomaterials (Sp)** A graduate course on molecular structure-property relationships in biomaterials. Special focus is given to polymers, metals, ceramics, composites, and biodegradable materials. The design of artificial biomaterials for biosensors, drug delivery and medical implants is considered. Host response and biocompatibility factors are introduced. Previous course in materials desirable.

**BENG5253 Bio-Mems (Irregular)** Topics include the fundamental principles of microfluidics, Navier-Stokes Equation, bio/abio interfacing technology, bio/abio hybrid integration of microfabrication technology, and various biomedical and biological problems that can be addressed with microfabrication technology and the engineering challenges associated with it. Lecture 3 hour per week. Prerequisites: MEEG 3503 or CVEG 3213 or CHEG 2133. (Same as MEEG 5253)

**BENG5263 Biomedical Engineering Principles (Fa)** Engineering principles applied to the design and analysis of systems affecting human health. This is a course focusing on fundamentals of physiological systems and modeling. Topics include: brief overview of anatomy and physiology, bioelectric phenomena and neuronal model, compartmental modeling, cardiovascular system and blood flow, biomechanics, computational biology and signal transduction. Requires a background in circuits, fluid dynamics, mechanics, biology, and/or biochemistry. Lecture 3 hours per week. Students may not earn credit for both BENG 5263 and BENG 4203. Prerequisites: MATH 3404 or equivalent and graduate standing.

**BENG5273 Numerical Methods in Biomedical Engineering (Sp)** Application of mathematical techniques and numerical methods for analyzing biological data and solving biological problems. The emphasis will be computer simulation and mathematical modeling applications in biomedical engineering. Lecture 3 hours per week. Students may not earn credit for both BENG 5273 and BENG 4223. Prerequisite: MATH 3404.

**BENG5283 Electronic Response of Biological Tissues (Irregular)** Understand the electric and magnetic response of biological tissues with particular reference to neural and cardiovascular systems. Passive and active forms of electric signals in cell communication. We will develop the central electrical mechanisms from the membrane channel to the organ, building on those that are common to many electrically active cells in the body. Analysis of Nernst equation, Goldman equation, linear cable theory, and Hodgkin-Huxley Model of action potential generation and propagation. High frequency response of tissues to microwave excitation, dielectric models for tissue behavior, Debye, Cole-Cole models. Role of bound and free water on tissue properties. Magnetic response of tissues. Experimental methods to measure tissue response. Applications to Electrocardi-

ography & Electroencephalography, Microwave Medical Imaging, RF Ablation will be discussed. Students may not receive credit for both BENG 4283 and BENG 5283. Prerequisites: MATH 3404, ELEG 3703 or PHYS 3414, BIOL 2533 or equivalent (Same as ELEG 5773)

**BENG5613 Simulation Modeling of Biological Systems (Irregular)** Application of computer modeling and simulation of discrete-event and continuous-time systems to solve biological and agricultural engineering problems. Philosophy and ethics of representing complex processes in simplified form. Deterministic and stochastic modeling of complex systems, algorithm development, application limits, and simulation interpretation. Emphasis on calibration, validation and testing of biological systems models for the purposes of system optimization, resource allocation, real-time control and/or conceptual understanding. Prerequisite: AGST 4023 or STAT 4003 or INEG 3333.

**BENG5703 Design and Analysis of Experiments for Engineering Research (Irregular)** Principles of planning and design of experiments for engineering research. Propagation of experimental error. Improving precision of experiments. Analysis of experimental data for optimal design and control of engineering systems using computer techniques. Students must have an introductory background in statistics. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component.

**BENG5723 Food Safety Engineering (Even years, Fa)** Principles of engineering methods applied to food and safety and sanitation. Principles of engineering methods applied to food safety and security. Discussion of thermal, chemical and electrical pasteurization or sterilization in food processing. Demonstration of monitoring and detecting techniques for food safety, including image analysis, biosensors and modeling. Lecture 3 hours per week. Prerequisite: BENG 4103 and FDSC 4124 (or equivalent).

**BENG5733 Advanced Biotechnology Engineering (Odd years, Fa)** Applications of the principles of bioprocess/biochemical engineering to microbiological and biomedical problems. Topics include applied enzymology, metabolic engineering, molecular genetics and control, and bioinformatics and nanobiotechnology in addition to classical applied enzyme and cell-growth kinetics and advanced bioreactor design. Prerequisite: BENG 3733 or CHEG 5531.

**BENG5743 Biotechnology Engineering (Fa)** Introduction to biotechnology topics ranging from principles of microbial growth, mass balances, bioprocess engineering as well as emerging principles in the design of biologically based microbial and enzymatic production systems. Application areas such as biofuels, and fine and bulk chemical production. Lecture 2 hours, laboratory 3 hours per week. Students may not earn credit for both BENG 5743 and BENG 4703. Prerequisite: Graduate standing. Corequisite: Lab component.

**BENG5801 Graduate Seminar (Sp)** Reports presented by graduate students on topics dealing with current research in agricultural engineering. Prerequisite: Graduate standing.

**BENG5923 Nonpoint Source Pollution Control and Modeling (Fa)** Control of hydrologic, meteorologic, and land use factors on nonpoint source (NPS) pollution in urban and agricultural watersheds. Discussion of water quality models to develop NPS pollution control plans and total maximum daily loads (TMDLs), with consideration of model calibration, validation, and uncertainty analysis. Prerequisite: BENG 4903 or CVEG 3223.

**BENG5933 Environmental and Ecological Risk Assessment (Sp)** Process and methodologies associated with human-environmental and ecological risk assessments. Environmental risk assessments based on human receptors as endpoints, addressing predominantly abiotic processes. Ecological risk assessments based on non-human receptors as endpoints. Approach using hazard definition, effects assessment, risk estimation, and risk management. Application of methods to student projects to gain experience in defining and quantifying uncertainty associated with human perturbation, management and restoration of environmental and ecological processes.

**BENG5943 Watershed Eco-Hydrology (Sp)** Engineering principles involved in assessment and management of surface water flow and hydrologic processes within ecosystems. Includes frequency analysis of rainfall, infiltration, runoff, evapotranspiration. Use of GIS/mathematical models to quantify hydrologic processes at the watershed-landscape scale. Design/implementation of best management practices and ecological engineering principles and processes for advanced ecological services. Lecture 3 hours per week. Students may not earn credit for both BENG 5943 and BENG 4903. Prerequisites: CVEG 3213 or equivalent.

**BENG5953 Ecological Engineering Design (Fa)** Design of low impact development techniques to enhance ecological services, reduce peak runoff, and capture sediments, nutrients and other pollutants resulting from urban development. Techniques may include: bio-swales, retention basins, filter strips. Design of sustainable ecological processes for the treatment and utilization of wastes/residues. Techniques may include: direct land application to soils/crops, composting systems, lagoons and constructed wetlands. Design goals include optimization of ecological services to maintain desig-

nated uses of land, water and air; including enhancement of habitat for wildlife and recreation, and the discovery of economically viable methods for co-existence of urban and agricultural land uses. Lecture 3 hours per week. Students may not earn credit for both BENG 5953 and BENG 4923. Prerequisite: BENG 4903 or equivalent.

**BENG600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**BENG700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Candidacy.

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## Biology (BIOL)

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**BIOL1541M Honors Principles of Biology Laboratory (Sp, Fa)** This course is designed for the well prepared student in the Honors program. It focuses on teaching students experimental and observational techniques used in the science of biology. It emphasizes the acquisition and interpretation of results that illustrate the major principles of biology. Corequisite: BIOL 1543H or BIOL 1543.

**BIOL1541L Principles of Biology Laboratory (Sp, Su, Fa)** Experimental and observational techniques used in biology with emphasis on the acquisition and interpretation of results that illustrate major biological principles. Corequisite: BIOL 1543.

**BIOL1543 Principles of Biology (Sp, Su, Fa)** Principles that unify biology with emphasis on scientific study that demonstrates how all organisms are the product of evolution and are parts of interacting systems from the molecular to the ecosystem level. Corequisite: BIOL 1541L.

**BIOL1543H Honors Principles of Biology (Sp, Fa)** This course is designed for the well prepared student in Honors program. It focuses on the principles that unify the science of biology. Students will be exposed to how scientific principles have been used to demonstrate that all organisms are the products of evolution and are parts of interacting systems from the molecular to the ecosystem level. Corequisite: BIOL 1541M or BIOL 1541L.

**BIOL1601M Honors Principles of Zoology Laboratory (Fa)** (Formerly ZOO 1611M) Laboratory exercises illustrating animal structure, physiology, genetics, and ecology. Corequisite: BIOL 1603.

**BIOL1601L Principles of Zoology Laboratory (Su, Fa)** (Formerly ZOO 1611L) Laboratory exercises illustrating animal structure, physiology, genetics, and ecology. Corequisite: BIOL 1603.

**BIOL1603 Principles of Zoology (Su, Fa)** (Formerly ZOO 1613) Introduction to zoological principles relating to cells, organ systems, development, genetics, ecology, and animal phylogeny. Corequisite: BIOL 1601L or BIOL 1601M. Prerequisite: BIOL 1543 and BIOL 1541L.

**BIOL1611M Honors Plant Biology Laboratory (Sp)** (Formerly BOTY 1611M) Pre- or Corequisite: BIOL 1613.

**BIOL1611L Plant Biology Laboratory (Sp, Su)** (Formerly BOTY 1611L) Pre- or Corequisite: BIOL 1613.

**BIOL1613 Plant Biology (Sp, Su)** (Formerly BOTY 1613) Consideration of basic flowering plant structure, growth, development, physiology, genetics, ecology, and a brief survey of other plant groups. Lecture 3 hours per week. BIOL 1611L is recommended as a corequisite and both are required for partial fulfillment of the Fulbright College natural sciences requirement. Prerequisite: BIOL 1543 and BIOL 1541L.

**BIOL2001 Bibliographic Practicum (Sp, Fa)** A systematic survey of biological literature and bibliographic resources. Includes library exercises and the compiling of selected bibliographies.

**BIOL2011M Honors General Microbiology Laboratory (Sp, Su, Fa)** Techniques for handling microorganisms. Does not count towards BS in Biology. Corequisite: BIOL 2013.

**BIOL2011L General Microbiology Laboratory (Sp, Su, Fa)** Techniques for handling microorganisms. Does not count toward BS in Biology. Corequisite: BIOL 2013.

**BIOL2013 General Microbiology (Sp, Su, Fa)** Basic concepts of microbiology including diversity, genetics, metabolism, growth, control of growth, pathogenesis, and immunology. Does not count towards BS in Biology. Corequisite: BIOL 2011L. Prerequisite: BIOL 1543 and BIOL 1541L and 1 semester of general chemistry.

**BIOL2013H Honors General Microbiology (Sp, Su, Fa)** Basic concepts of microbiology including diversity, genetics, metabolism, growth, control of growth, pathogenesis, and immunology. Does not count towards BS in Biology. Corequisite: BIOL 2011L or BIOL 2011M. Prerequisite: BIOL 1543 and BIOL 1541L and 1 semester of general chemistry.

**BIOL2211L Human Physiology Laboratory (Sp, Fa)** (Formerly ZOO 2211L) Exercises include experiments on osmosis, reflexes, senses, muscle, cardiovascular system, ventilation, metabolism, renal function, etc. Data collection, analysis, and report writing. Does not satisfy the Fulbright College writing requirement. Corequisite: BIOL 2213.

**BIOL2213 Human Physiology (Sp, Fa)** (Formerly ZOO 2213) Fundamental concepts of physiology with emphasis in the human. Corequisite: BIOL 2211L. Prerequisite: (CHEM 1023 and CHEM 1021L) or (CHEM 1074 and CHEM 1071L) or (CHEM 1103 and CHEM

1101L) or (CHEM 1123 and CHEM 1121L) and MATH 1203.

**BIOL2321L General Genetics Laboratory (Sp)** Analysis of genetic problems and experiments with emphasis on "hands-on" experience with a variety of organisms. May require time outside laboratory period. Laboratory 3 hours per week. Pre- or Corequisite: BIOL 2323.

**BIOL2323 General Genetics (Sp)** Surveys of Mendelian, molecular, and population mechanisms of inheritance and gene expression in prokaryotes and eukaryotes. Lecture 3 hours per week. Prerequisite: BIOL 1543 and BIOL 1541L and CHEM 1123 and CHEM 1121L and (MATH 1203 or STAT 2023 or equivalent).

**BIOL2404 Comparative Vertebrate Morphology (Sp, Fa)** Anatomy of selected vertebrate animals with emphasis upon homologous structures in various animal groups. Lecture 2 or 3 hours, laboratory 4 or 6 hours per week. BIOL 2443 and BIOL 2441L may not be counted for major in Zoology credit if prior credit in BIOL 2404 has been earned. Corequisite: Lab component. Prerequisite: BIOL 1543 and BIOL 1541L.

**BIOL2441L Human Anatomy Laboratory (Sp, Su, Fa)** Laboratory 3 hours exercises in mammalian anatomy. Cannot be taken without prior credit in BIOL 2443 or concurrent enrollment in BIOL 2443. Corequisite: BIOL 2443.

**BIOL2443 Human Anatomy (Sp, Su, Fa)** Description of human body as a series of organ systems and their interrelationships. Corequisite: BIOL 2441L. Prerequisite: 4 hours of biological sciences.

**BIOL2531L Cell Biology Laboratory (Sp, Fa)** Introduction to methods and techniques used in Cell Biology research. Laboratory experiences to highlight topics covered in BIOL 2533. Pre- or Corequisite: BIOL 2533

**BIOL2533 Cell Biology (Sp, Fa)** Introduction to cell structure, cell processes, biological polymers, energetics, and diversity. An introduction to biochemistry and cell chemistry. Pre- or Corequisite: (CHEM 1123 and CHEM 1121L) or (CHEM 1223 and CHEM 1221L) or equivalent. Prerequisite: BIOL 1543 and BIOL 1541L.

**BIOL2814 Invertebrate Zoology (Fa)** (Formerly ZOO 2814) Invertebrate phyla of animals with emphasis on structure, classification, and relationships. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: BIOL 1543 and BIOL 1541L.

**BIOL3023 Evolutionary Biology (Fa)** An introduction to the mechanisms and patterns of evolutionary change. Seeks to develop logical, scientific skills and to apply them in understanding how life has changed during the history of the earth. Corequisite: Drill component. Prerequisite: BIOL 1543 and BIOL 1541L. Pre- or Corequisite: BIOL 2323.

**BIOL3123 Prokaryote Biology (Sp)** An in-depth coverage of prokaryote diversity, genetics, metabolism, growth, structures and functions. Prerequisite: BIOL 2533.

**BIOL3123H Honors Prokaryote Biology (Sp)** An in-depth coverage of prokaryote diversity, genetics, metabolism, growth, structures and functions. Prerequisite: BIOL 2533.

**BIOL3353 Mechanics of Human Movement (Sp, Su, Fa)** (Formerly ZOO 3353) An introduction to basic analysis of motor skills. No credit given toward major in Zoology. Prerequisite: BIOL 2443 and BIOL 2441L. (Same as KINS 3353)

**BIOL3861L General Ecology Laboratory (Fa)** Pre- or Corequisite: BIOL 3863.

**BIOL3863 General Ecology (Sp, Fa)** Ecological principles and concepts; environmental factors and interactions that determine distribution and abundance of organisms. Prerequisite: 7 hours of biological science.

**BIOL3923H Honors Colloquium (Irregular)** Covers a special topic or issue, offered as part of the honors program. Prerequisite: honors candidacy (not restricted to candidacy in biological sciences).

**BIOL399VH Honors Course (Sp, Fa) (1-4)** Prerequisite: junior standing.

**BIOL4104 Taxonomy of Flowering Plants (Sp)** Identifying, naming, and classifying of wildflowers, weeds, trees, and other flowering plants. Emphasis is on the practical aspects of plant identification. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: BIOL 1613 and BIOL 1611L and BIOL 2323 and BIOL 3023

**BIOL4114 Dendrology (Odd years, Fa)** Morphology, classification, geographic distribution, and ecology of woody plants. Lecture 3 hours, laboratory 3 hours per week, and fieldtrips. Prerequisite: BIOL 3863.

**BIOL4124 Food Microbiology (Sp)** (Formerly MBIO 4124) Microbiology, contamination, preservation, and spoilage of different kinds of foods, food poisoning, sanitation, control, and inspection; microbiology of water; and standard methods for official food and public health laboratories. Lecture 2 hours, laboratory 4 hours per week. Corequisite: Lab component. Prerequisite: BIOL 2533 and CHEM 1123 and CHEM 1121L or equivalent. (Same as FDSC 4124)

**BIOL4163 Dynamic Models in Biology (Irregular)** Mathematical and computational techniques for developing, executing, and analyzing dynamic models arising in the biological sciences.

Both discrete and continuous time models are studied. Applications include population dynamics, cellular dynamics, and the spread of infectious diseases. Prerequisite: MATH 2554. (Same as MATH 4163)

**BIOL4233 Genomics and Bioinformatics (Sp)** Principles of molecular and computational analyses of genomes. Prerequisite: BIOL 4313.

**BIOL4233H Honors Genomics and Bioinformatics (Sp)** Principles of molecular and computational analyses of genomes. Prerequisite: BIOL 4313.

**BIOL4234 Comparative Physiology (Fa)** Comparison of fundamental physiological mechanisms in various animal groups. Adaptations to environmental factors at both the organismal and cellular levels are emphasized. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: BIOL 2533 and CHEM 3613 and CHEM 3611L

**BIOL4263 Cell Physiology (Fa)** In-depth molecular coverage of cellular processes involved in growth, metabolism, transport, excitation, signalling and motility, with emphasis on function and regulation in eukaryotes, primarily animals. Prerequisite: BIOL 2533 and BIOL 2323 and CHEM 3813 and PHYS 2033.

**BIOL4263H Honors Cell Physiology (Fa)** In-depth molecular coverage of cellular processes involved in growth, metabolism, transport, excitation, signalling and motility, with emphasis on function and regulation in eukaryotes, primarily animals. Prerequisite: BIOL 2533 and BIOL 2323 and CHEM 3813 and PHYS 2033.

**BIOL4304 Plant Physiology (Fa)** Study of plant processes. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: BIOL 1613 and BIOL 1611L and BIOL 1543 and BIOL 1541L and general chemistry.

**BIOL4313 Molecular Cell Biology (Sp)** In-depth molecular coverage of transcription, cell cycle, translation, and protein processing in eukaryotes and prokaryotes. Prerequisite: BIOL 2533 and BIOL 2323 and CHEM 3603 and CHEM 3601L and CHEM 3613 and CHEM 3611L.

**BIOL4313H Honors Molecular Cell Biology (Sp)** In-depth molecular coverage of transcription, cell cycle, translation, and protein processing in eukaryotes and prokaryotes. Prerequisite: BIOL 2533 and BIOL 2323 and CHEM 3603 and CHEM 3601L and CHEM 3613 and CHEM 3611L.

**BIOL4353 Ecological Genetics (Odd years, Fa)** Analysis of the genetics of natural and laboratory populations with emphasis on the ecological bases of evolutionary change. Prerequisite: BIOL 2323 and BIOL 2321L and MATH 2554 and STAT 2023 or equivalent.

**BIOL4404 Comparative Botany (Sp)** A comparative approach to organisms classically considered to be plants with emphasis on morphology, life history, development, and phylogeny. Three hours lecture, 4 hours lab per week. Prerequisite: BIOL 2323 and BIOL 2533.

**BIOL4404H Honors Comparative Botany (Even years, Fa)** A comparative approach to organisms classically considered to be plants with emphasis on morphology, life history, development, and phylogeny. Three hours lecture, 4 hours lab per week.

**BIOL4424 Mycology (Fa)** Form and function of the fungi. Lecture 2 hours, laboratory 4 hours per week. Corequisite: Lab component. Prerequisite: BIOL 2323 and BIOL 2533 or Graduate Standing.

**BIOL4433 Principles of Evolution (Even years, Fa)** Advanced survey of the mechanisms of evolutionary change with special emphasis on advances since the Modern Synthesis. Historical, theoretical, and population genetics approaches are discussed. Recommended BIOL 3023 and BIOL 2321L and BIOL 3861L. Prerequisite: BIOL 2323 and BIOL 3863.

**BIOL4463 Physiological Ecology (Odd years, Sp)** Interactions between environment, physiology, and properties of individuals and populations on both evolutionary and ecological scales. Prerequisite: BIOL 3863 and BIOL 4234 and its lab component.

**BIOL4511L Population Ecology Laboratory (Even years, Fa)** Pre- or Corequisite: BIOL 4513.

**BIOL4513 Population Ecology (Even years, Fa)** Survey of theoretical and applied aspects of population processes stressing models of growth, interspecific interactions, and adaptation to physical and biotic environments. Prerequisite: BIOL 3863.

**BIOL4523 Plant Ecology (Even years, Sp)** To develop understanding of important ecological concepts through study of dynamics relationships among plants and their environment. To become familiar with the literature of plant ecology, and interpretation and critique of ecological research. Prerequisite: BIOL 3863.

**BIOL4554 Developmental Biology (Sp)** An analysis of the concepts of mechanisms of development emphasizing the experimental approach. Lecture 3 hours, laboratory 3 hours per week. Corequisite: lab component. Prerequisite: BIOL 2533 and BIOL 2323 or graduate standing.

**BIOL4613 Primate Adaptation and Evolution (Sp, Su, Fa)** Introduction to the biology of the order Primates. This course considers the comparative anatomy, behavioral ecology and paleontology of our nearest living relatives. Prerequisite: BIOL 3023 or ANTH 1013. (Same as ANTH 4613)

**BIOL4693 Forest Ecology (Odd years, Fa)** Introduction to the various biological, ecological and historical aspects of forest communities, with particular emphasis on the forests of the central and southeastern United States. Prerequisite: BIOL 3863.

**BIOL4703 Mechanisms of Pathogenesis (Fa)** A survey of the events causing human disease at the molecular, cellular and genetic levels. Seeks to develop an appreciation that both the tricks pathogens use and the body's own defenses contribute to pathology. Prerequisite: BIOL 2533.

**BIOL4703H Honors Mechanisms of Pathogenesis (Fa)** A survey of the events causing human disease at the molecular, cellular and genetic levels. Seeks to develop an appreciation that both the tricks pathogens use and the body's own defenses contribute to pathology. Prerequisite: BIOL 2533.

**BIOL4711L Basic Immunology Laboratory (Sp)** Corequisite: BIOL 4713.

**BIOL4713 Basic Immunology (Sp)** (Formerly MBIO 4714) A general overview of immunity with emphasis on the underlying cellular, molecular, and genetic events, and discussions of more specialized issues in immunology, such as disease states involving the immune system, and other interesting problems in modern immunology. Lecture 2 hours, laboratory 4 hours per week. Prerequisite: BIOL 2323 and BIOL 2533.

**BIOL4713H Honors Basic Immunology (Sp)** A general overview of immunity with emphasis on the underlying cellular, molecular, and genetic events, and discussions of more specialized issues in Immunology, such as disease states involving the immune system, and other interesting problems in modern Immunology. Prerequisite: BIOL 2323 and BIOL 2533.

**BIOL4724 Protistology (Odd years, Fa)** The biology of eukaryotes other than animals, land plants, and fungi with emphasis on morphology and modern approaches to phylogenetic systematics. Three hours lecture, four hours lab/week. Involves writing term papers. Corequisite: Lab component. Prerequisite or Corequisite: BIOL 3023 or graduate standing. Prerequisite: BIOL 2533 and BIOL 2323 or graduate standing.

**BIOL4734 Wildlife Management Techniques (Odd years, Sp)** To familiarize students with techniques used in the management of wildlife populations. Students will be exposed to field methods, approaches to data analysis, experimental design, and how to write a scientific paper. Management applications will be emphasized. Lecture 3 hours, laboratory 3 hours per week. Prerequisite: BIOL 3863.

**BIOL4744 Fish Biology (Odd years, Sp)** Morphology, classification, life history, population dynamics, and natural history of fishes and fish-like vertebrates. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: 12 hours of biological science.

**BIOL4753 General Virology (Sp)** An introduction to viral life-cycles, structure, and host cell interactions. Emphasis placed on molecular and biochemical aspects of virology. Two hour lecture and one hour discussion. Prerequisite: BIOL2533 and BIOL2323

**BIOL4763 Ornithology (Even years, Sp)** Taxonomy, morphology, physiology, behavior, and ecology of birds. Lecture, laboratory, and field work. Corequisite: Lab component. Prerequisite: BIOL 3863

**BIOL4774 Biometry (Even years, Sp)** Students learn biological statistics and experimental design by actually designing experiments and analyzing data, as well as through lecture, discussion, reading, writing, and problem solving. Lecture 3 hours, laboratory 3 hours each week. Prerequisite: STAT 2023 or equivalent, BIOL 3863.

**BIOL4783 Mammalogy (Even years, Fa)** Lectures and laboratory dealing with classification, morphology, distribution, ecology, behavior, and physiology of mammals. Two hours lecture, 4 hours laboratory. Corequisite: lab component. Prerequisite: 10 hours Biological Sciences.

**BIOL4793 Introduction to Neurobiology (Sp)** Exploration of the neurological underpinnings of perception, action, and experience including: how sense receptors convert information in the world into electricity, how information flows through the nervous systems, how neural wiring makes vision possible, how the nervous system changes with experience, and how the system develops. Prerequisite: BIOL 2533

**BIOL480V Special Problems (Sp, Su, Fa) (1-6)** For advanced students with adequate preparation.

**BIOL480VH Honors Special Problems (Sp, Su, Fa) (1-6)** For advanced students with adequate preparation.

**BIOL4814 Limnology (Odd years, Fa)** Physical, chemical and biological conditions of inland waters. Lecture 3 hours, laboratory by arrangement. Corequisite: Lab component. Prerequisite: (CHEM 1123 and CHEM 1121L) or equivalent and BIOL 3863 or instructor's permission.

**BIOL4833 Animal Behavior (Odd years, Fa)** Organization, regulation, and phylogeny of animal behavior, emphasizing vertebrates. Lecture, laboratory, and field work. Corequisite: Lab component.

**BIOL4844 Community and Ecosystem Ecology (Odd years, Fa)** Survey of theoretical and applied aspects of community

processes stressing structure, tropic dynamics, community interactions, and major community types. Corequisite: Lab component. Prerequisite: BIOL 3863.

**BIOL485V Field Ecology (Sp, Su) (1-3)** Project oriented approach employing current field and laboratory techniques, experimental design, and data analysis. Field trip is required.

**BIOL4863 Analysis of Animal Populations (Even years, Sp)** Basic principles of design and analysis for population studies of fish and wildlife species. Students will be instructed in the use of the latest software for estimating population parameters. Focus will be on both concepts and applications. Management applications of estimated parameters will be emphasized. Lecture 2 hours, laboratory 3 hours per week. Prerequisite: BIOL 3863.

**BIOL490V Special Topics in Microbiology (Irregular) (1-6)** Consideration of new areas of microbiological knowledge not yet treated adequately in textbooks or in other courses. Prerequisite: 8 hours of biological sciences. May be repeated for up to 6 hours of degree credit.

**BIOL4933 Special Topics in Zoology (Su)** Discussion of recent outstanding zoological research of interest to zoology majors and public school science teachers. Prerequisite: 8 hours of biological sciences. May be repeated for up to 6 hours of degree credit.

**BIOL498V Senior Thesis (Sp, Su, Fa) (1-6)**

**BIOL499V Problems In Biological Sciences (Sp, Su, Fa) (1-4)** Prerequisite: senior standing. May be repeated for up to 8 hours of degree credit.

**BIOL499VH Honors Problems in Biological Sciences (Sp, Su, Fa) (1-4)** Prerequisite: senior standing. May be repeated for up to 8 hours of degree credit.

**BIOL5001 Seminar in Biology (Sp, Fa)** Discussion of selected topics and review of current literature in any area of the biological sciences. (Same as CEMB 5911) May be repeated for up to 2 hours of degree credit.

**BIOL5003 Laboratory in Prokaryote Biology (Sp)** Laboratory techniques in prokaryote culture, identification, physiology, metabolism, and genetics. Laboratory 6 hours per week. Prerequisite: BIOL 3123.

**BIOL5063 Climate Through Time (Sp)** The earth's climate history over the last 2 million years and the influence various factors have had on it; compilation and paleoclimatic histories and methods of dating climatic effects. Prerequisite: GEOG 4363 or equivalent. (Same as ENDY 5063, GEOS 5063)

**BIOL5233 Genomics and Bioinformatics (Sp)** Principles of molecular and computational analyses of genomes. Prerequisite: BIOL4313 or BIOL 5313.

**BIOL5263 Cell Physiology (Fa)** In-depth molecular coverage of cellular processes involved in growth, metabolism, transport, excitation, signaling and motility, with emphasis on function and regulation in eukaryotes, primarily animals. Prerequisite: BIOL 2323, BIOL 2533, BIOL 2531L, CHEM 3813, and PHYS 2033.

**BIOL529V Research in Physiology (Sp, Su, Fa) (1-6)**

**BIOL5313 Molecular Cell Biology (Sp)** In-depth molecular coverage of transcription, cell cycle, translation, and protein processing in eukaryotes and prokaryotes. Prerequisite: BIOL 2533 and BIOL 2323 and CHEM 3603 and CHEM 3601L and CHEM 3613 and CHEM 3611L.

**BIOL5334 Biochemical Genetics (Sp)** Lectures and laboratories based on modern molecular genetic techniques for analyses of eukaryotes and manipulation of prokaryotes. A hands-on course in recombinant DNA techniques: laboratory practices in gene identification, cloning, and characterization. Lecture 2 hours, laboratory 6 hours per week. Corequisite: Lab component. Prerequisite: BIOL 3323 (or equivalent) and CHEM 3813 (or equivalent).

**BIOL5343 Advanced Immunology (Fa)** Aspects of innate, cell-mediated, and humoral immunity in mammalian and avian species. Molecular mechanisms underlying the function of the immune system are emphasized. A course in Basic Immunology prior to enrollment in Advanced Immunology is recommended but not required. Lecture 3 hours per week. (Same as POSC 5343)

**BIOL5352L Immunology in the Laboratory (Sp)** Laboratory course on immune-diagnostic laboratory techniques and uses of antibodies as a research tool. Included are cell isolation and characterization procedures, immunochemistry, flow cytometry, ELISA and cell culture assay systems. Laboratory 6 hours per week. Prerequisite: POSC 5343 or BIOL 5343.

**BIOL5353 Ecological Genetics (Odd years, Fa)** Analysis of the genetics of natural and laboratory populations with emphasis on the ecological bases of evolutionary change. Prerequisite: BIOL 3323 and BIOL 3321L and MATH 2554 and STAT 2023 or equivalent.

**BIOL539V Research in Genetics (Sp, Su, Fa) (1-6)**

**BIOL5404 Comparative Botany (Odd years, Fa)** A comparative approach to organisms classically considered to be plants with emphasis on morphology, life history, development, and phylogeny. Three hours lecture, 4 hours lab per week. Prerequisite: graduate standing.

**BIOL5423 Human Evolutionary Anatomy (Irregular)** Paleo-

biologists reconstruct past lifeways and systematic relationships of our ancestors using comparative studies of bony morphology and associated soft tissues. This course surveys methods and theories used to infer function and phylogeny, and details relevant aspects of the anatomy of humans, living great apes, and fossil human ancestors. Prerequisite: ANTH 1013 and BIOL 1543. (Same as ANTH 5423)

**BIOL5433 Principles of Evolution (Even years, Fa)**

Advanced survey of the mechanisms of evolutionary change with special emphasis on advances since the Modern Synthesis. Historical, theoretical, and population genetics approaches are discussed. Recommended: BIOL 3023 and BIOL 3321L and BIOL 3861L. Prerequisite: BIOL 3323 and BIOL 3863.

**BIOL5463 Physiological Ecology (Odd years, Sp)** Interactions between environment, physiology, and properties of individuals and populations on both evolutionary and ecological scales. Prerequisite: BIOL 3863 and BIOL 4234.

**BIOL5511L Population Ecology Laboratory (Even Years, Fa)** Demonstration of the models and concepts from BIOL 5513. Pre- or Corequisite: BIOL 5513.

**BIOL5513 Population Ecology (Even years, Fa)** Survey of theoretical and applied aspects of populations processes stressing models of growth, interspecific interactions, and adaptation to physical and biotic environments. Corequisite: BIOL 5511L. Prerequisite: BIOL 3864.

**BIOL5523 Plant Ecology (Even years, Sp)** To develop understanding of important ecological concepts through study of dynamics relationships among plants and their environment. To become familiar with the literature of plant ecology, and interpretation and critique of ecological research. Prerequisite: BIOL 3864.

**BIOL5524 Developmental Biology (Sp)** An analysis of the concepts and mechanisms of development emphasizing the experimental approach. Corequisite: Lab component.

**BIOL5533 Chemical and Biochemical Aspects of Evolution (Odd years, Sp)** Abiotic synthesis of biomolecules on Earth, the origin of cells; genetic information, origin of life on Earth and elsewhere, evolution and diversity, ecological niches, bacteria, archaea, eukaryotes, novel metabolic reshaping of the environment, life being reshaped by the environment, molecular data and evolution.

**BIOL5553 Astrobiology (Irregular)** Discusses the scientific basis for the possible existence of extraterrestrial life. Includes the origin and evolution of life on Earth, possibility of life elsewhere in the solar system (including Mars), and the possibility of life on planets around other stars. Prerequisite: Instructor consent. (Same as SPAC 5553)

**BIOL558V Research In Cell Biology (Sp, Su, Fa) (1-6)** May be repeated for up to 18 hours of degree credit.

**BIOL5703 Mechanisms of Pathogenesis (Fa)** A survey of events causing human disease at the molecular, cellular and genetic levels. Seeks to develop an appreciation that both the tricks pathogens use and the body's own defenses contribute to pathology.

**BIOL5713 Basic Immunology (Sp)** A general overview of Immunity with emphasis on the underlying cellular, molecular and genetic events controlling immune reactions. Reading of the primary literature on disease states involving the immune system.

**BIOL5723 Fish Biology (Odd years, Sp)** Morphology, classification, life histories, population dynamics, and natural history of fishes and fish-like vertebrates. Lecture 2 hours, laboratory 3 hours per week. Corequisite: lab component. Prerequisite: 12 hours of biological sciences.

**BIOL5743 Herpetology (Even years, Sp)** Morphology, classification and ecology of amphibians and reptiles. Lecture 2 hours, laboratory 1 hour per week. Corequisite: Lab component.

**BIOL5753 General Virology (Sp)** An introduction to viral life-cycles, structure, and host cell interactions. Emphasis placed on molecular and biochemical aspects of virology. Two hour lecture and one hour discussion. Prerequisite: BIOL 2533 and BIOL 2323.

**BIOL5763 Ornithology (Even years, Sp)** Taxonomy, morphology, physiology, behavior, and ecology of birds. Lecture, laboratory, and field work. Corequisite: Lab component. Prerequisite: 10 hours of biological sciences.

**BIOL5783 Mammalogy (Fa)** Lectures and laboratory dealing with classification, morphology, distribution, ecology, behavior, and physiology of mammals. Two hours lecture, 4 hours laboratory. Corequisite: Lab component.

**BIOL579V Research in Vertebrate Zoology (Sp, Su, Fa) (1-6)**

**BIOL580V Research in Botany (Sp, Su, Fa) (1-6)** May be repeated for up to 6 hours of degree credit.

**BIOL5814 Limnology (Odd years, Fa)** Physical, chemical and biological conditions of inland waters. Lecture 3 hours per week, laboratory arranged. Corequisite: lab component. Prerequisite: (CHEM 1123 and CHEM 1121L) or equivalent and 12 hours of biological sciences.

**BIOL581V Research In Microbiology (Sp, Su, Fa) (1-6)**

**BIOL5833 Animal Behavior (Odd years, Fa)** Organization, regulation, and phylogeny of animal behavior, emphasizing

vertebrates. Lecture, laboratory, and field work. Corequisite: Lab component.

**BIOL5843 Conservation Biology (Fa)** The study of direct and indirect factors by which biodiversity is impacted by human activity. It is a synthetic field of study that incorporates principles of ecology, biogeography, population genetics, economics, sociology, anthropology, philosophy, geology, and geography. Prerequisite: BIOL 3863.

**BIOL5844 Community Ecology (Odd years, Fa)** Survey of theoretical and applied aspects of community processes stressing structure, trophic dynamics, community interactions, and major community types. Corequisite: Lab component. Prerequisite: BIOL 3864.

**BIOL585V Field Ecology (Sp, Su) (1-3)** Project-oriented approach employing current field and laboratory techniques, experimental design and data analysis. Field trip is required.

**BIOL589V Research in Field Zoology (Sp, Su, Fa) (1-6)**

**BIOL590V Special Topics in Botany (Sp, Fa) (1-6)** Consideration of new areas of botanical science not yet treated adequately in textbooks or in other courses. Prerequisite: 8 hours of biological sciences. May be repeated for up to 6 hours of degree credit.

**BIOL5914 Stream Ecology (Even years, Fa)** Current concepts and research in lotic ecosystem dynamics. Lecture, laboratory, field work and individual research projects required. Corequisite: Lab component. Prerequisite: Some previous course work in ecology is essential.

**BIOL591V Special Topics in Microbiology (Sp, Fa) (1-6)** Consideration of new areas of microbiological science not yet treated adequately in textbooks or in other sciences. Prerequisite: 8 hours of biological sciences.

**BIOL5933 Global Biogeochemistry: Elemental Cycles and Environmental Change (Odd Years, Sp)** This course explores the chemical, biological, and geological processes occurring within ecosystems. An understanding of these processes is used to investigate how they form the global biogeochemical cycles that provide energy and nutrients necessary for life. Class discussions focus on global change and the effects of more recent anthropogenic influences. Prerequisite: College level chemistry or biochemistry and ecology.

**BIOL600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**BIOL700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Graduate standing. May be repeated for up to 18 hours of degree credit.

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### Business Law (BLAW)

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**BLAW3033 Commercial Law (Sp)** A study of the laws applicable to commercial transactions. Topics covered include the common law of contracts, Articles Two (Sales) and Three (Commercial Paper) of the Uniform Commercial Code, secured transactions, suretyship, and bankruptcy. Prerequisite: WCOB 1012.

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### Career and Technical Education (CATE)

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**CATE1001 Practicum in Career & Technical Education (Sp, Fa)** This practicum is a requirement for entry into the Career & Technical teacher preparation program. Students will be involved in documented experiences with children for a minimum of 60 hours with at least 20 of them being in career & technical education classrooms at three schools with diverse populations. (Same as CIED 1011, PHED 1003)

**CATE380V Supervised Work Experience (Sp, Su, Fa) (1-9)** Supervision in business and industry under guidance. Designed for students who desire or need directed occupational experience. May be repeated for up to 6 hours of degree credit.

**CATE390V Competency Based Teacher Development: Program Organization (Sp, Su, Fa) (3-12)** Development of competencies related to the methodology of instructional planning, execution, and evaluation. Provided by PBTE modules and University resource person. Enrollment before CATE 391V and 392V. Prerequisite: Employed in service vocational-technical education field based instructor. May be repeated for up to 12 hours of degree credit.

**CATE391V Competency Based Teacher Development - Teaching Adults (Sp, Su, Fa) (3-12)** Development of competencies related to vocational guidance, contemporary instructional techniques, and student vocational organizations. Provided by PBTE modules and University resource person. Prerequisite: Completion of 12 credit hours of CATE 390V and employee inservice-vocational-technical education field based instructor. May be repeated for up to 24 hours of degree credit.

**CATE392V Competency Based Teacher Development: Teaching & Learning (Sp, Su, Fa) (3-12)** Development of competencies related to program planning, development, evaluation; school community relations; and professional development. Provided by CBTD modules and University resource person. Prerequisite: Completion of 12 credit hours of CATE 391V and employee inservice-vocational-technical education field based instructor. May be repeated

for up to 12 hours of degree credit.

**CATE393V Competency Based Internship: Educational Legal Issues (Sp, Su, Fa) (3-6)** In an actual school setting the student will satisfactorily demonstrate the competencies required to conduct a total vocational-technical education program. Instruction and follow-up will be provided by a University resource person. Prerequisite: Completion of 12 credit hours of CATE 392V and employee inservice-vocational-technical education field based instructor. May be repeated for up to 24 hours of degree credit.

**CATE4003 Introduction to Professionalism (Fa)** Studying and developing educational concepts in career and technical education with accepted principles of professionalism in secondary education settings.

**CATE4003H Honors Introduction to Professionalism (Fa)** Studying and developing professional concepts in vocational education with accepted principles of professionalism applied to career and technical education settings.

**CATE4013 Teaching Strategies (Fa)** Methods and techniques in the preparation and delivery of teaching.

**CATE4023 Classroom Management (Fa)** Theory and techniques in classroom management, including professional ethics and school policies related to students, faculty and programs.

**CATE4033 Assessment / Program Evaluation (Fa)** An introduction to constructing, evaluating and interpreting tests; descriptive and inferential statistics; state competency testing; and guidelines for state program evaluations.

**CATE4041 Lab Management in Career & Technical Education (Sp)** Selection, design and evaluation of laboratory experiences in business education, family and consumer sciences and technology education. Co-requisite: CATE 406V.

**CATE4051 Seminar Teaching Internship (Sp)** Site-based field experiences are integrated with the course content to provide continuity between theory and practice. Classroom management, ethics and diversity are emphasized. Corequisite: VOED 406V.

**CATE406V Teaching Internship (Sp)** A minimum of 15 weeks will be spent in an off-campus school, at which time the student will have an opportunity under supervision to observe, to teach and to participate in other activities involving the school and the community. Prerequisite: Senior status, CATE 4003, CATE 4013, CATE 4023, CATE 4033, CIED 3023 and CIED 3033.

**CATE4101 Understanding Student Affairs (Fa)** This course provides students an opportunity to gain knowledge in the theory and practical application of student affairs. An emphasis is placed on leadership development, problem solving, and career exploration in student affairs.

**CATE4122 Leadership Development (Sp)** Studying and developing leadership in career and technical education using commonly accepted principles of leadership applied to workforce education settings.

**CATE4803 Problems in Career & Technical Education (Sp, Su, Fa)** Problems and issues relating to instruction in career and technical education. May be repeated for up to 24 hours of degree credit.

**CATE481V Career Planning and Professional Development for Juniors and Seniors (Sp, Fa) (1-3)** A consideration of special problems relating to technical education and career planning. May be repeated for up to 3 hours of degree credit.

**CATE5004 Cohort Directed Field Experience (Sp, Su, Fa)** A minimum of 8 weeks will be spent in an off-campus school, at which time the student will have an opportunity to observe 6 classroom teachers and to teach under supervision. Prerequisite: Cohort year status.

**CATE5013 Teaching Strategies (Fa)** This course is designed to offer a variety of ideas and experiences concerning methods of teaching, planning and presenting instruction.

**CATE5016 Cohort Teaching Internship (Sp, Su, Fa)** A minimum of 10 weeks will be spent in an off-campus school, at which time the intern will have an opportunity under supervision to observe, to teach, and to participate in other activities involving the school and the community. Prerequisite: Cohort year status.

**CATE5033 Assessment/Program Evaluation (Fa)** An introduction to constructing, evaluating, and interpreting tests; descriptive and inferential statistics; state competency testing; and guidelines for state program evaluations. Prerequisite: Graduate Status

**CATE5103 Teaching Strategies in Career & Technical Education** Methods and techniques in teaching business education, family and consumer sciences, and technology education.

**CATE5113 Laboratory Management in Career & Technical Education** Selection, design, and evaluation of laboratory experiences in career and technical education.

**CATE5123 Current Design and Evaluation in Career & Technical Education (Sp, Su, Fa)** Methods and techniques in developing, organizing, implementing, and evaluating programs in career & technical education.

**CATE5191 Applied Research (Sp, Su, Fa)** Interpretation and evaluation of research in education for classroom utilization.

**CATE5453 Career Orientation Programs (Su)** Provides a survey of types and sources of occupational information and methods of providing occupational-oriented experiences. Designed for teachers and future teachers of career orientation and is 1 of 2 required courses for vocational career orientation.

**CATE5463 Applications in Career Orientation (Su)** Student is introduced to various teaching methods and techniques of managing hands-on activities in career orientation class setting.

**CATE5503 Trends and Issues in Technology Education (Sp, Su, Fa)** A comprehensive technology education methods course pertaining to the teaching of standards-based curriculum materials.

**CATE5543 Technology for Teaching and Learning (Su, Fa)** A study of computer technology as it relates to teacher education. This course concentrates on knowledge and performance and includes hands-on technology activities that can be incorporated in an educational setting. Students interact with the instructor and other students via BlackBoard and engage in weekly discussions and acquire hands-on computer technology experience.

**CATE5573 Instructional Materials (Sp, Su)** A comprehensive course designed to give students the opportunity to understand, prepare, and test materials leading toward excellence in instruction.

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## Communication Disorders (CDIS)

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### CDIS2253 Introduction to Communicative Disorders

**(Sp, Fa)** An introductory course which surveys the professional interests of speech-language pathology and audiology with specific attention to the general recognition and classification of disorders of speech, language, and hearing, and general trends in rehabilitation. Consideration given to the classroom teacher's involvement in communication disorders.

**CDIS3103 Introduction to Audiology (Fa)** Introduction to the basic concepts for administering and interpreting hearing tests, including the anatomy and physiology of the auditory system, disorders of the ear, and techniques for administering and interpreting basic pure tone threshold tests.

### CDIS3124 Normal Phonology and Articulatory Process

**(Fa)** Analysis of the English speech sounds as a basis for speech improvement; physiological positions and movements; acoustic qualities and transcription in the international phonetic alphabet. Corequisite: Lab component.

**CDIS3203 Articulation Disorders (Sp)** A study of the definition, etiology, pathology, and treatment procedures of problems of articulation. Prerequisite: CDIS 3124 and CDIS 3213.

**CDIS3213 Anatomy of Physiology of the Speech and Hearing Mechanisms (Fa)** Structure and function of the organic mechanisms responsible for speech, language, and audition.

**CDIS3224 Language Development in Children (Fa)** Study of the nature of language behavior and of the typical development of speech and language functions for communicative purposes, with primary emphasis on the preschool and early school-age child. Corequisite: Lab component.

**CDIS3224H Honors Language Development in Children (Fa)** Study of the nature of language behavior and of the typical development of speech and language functions for communicative purposes, with primary emphasis on the preschool and early school-age child. Corequisite: Lab component.

**CDIS3233 Introduction to Clinical Practice (Sp, Fa)** An introduction to the various aspects of clinical operations including technical and interpersonal relationship skills necessary for case management and a survey of professional standards.

**CDIS3923H Honors Colloquium (Irregular)** Treats a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in speech or dramatic art).

**CDIS399VH Honors Course (Irregular) (1-6)** Prerequisite: Junior standing. May be repeated for up to 12 hours of degree credit.

**CDIS4001 Clinical Practicum Undergrad (Sp, Fa)** Entry-level training in speech-language clinical practicum activities. This course is taken for satisfactory or unsatisfactory credit. Prerequisite: CDIS 2224 and CDIS 3203 and CDIS 3223 and CDIS 3234 plus satisfactory completion of specific program requirements for admission to clinical practice.

**CDIS4103 Sign Language and Deafness (Sp, Su)** An introduction to American Sign Language (ASL) and the Deaf Community that uses it. This class will study expressive and sign language skills using ASL vocabulary, structure and grammar. The Deaf Community will be studied through videotapes and readings. Issues in Deaf Education will also be introduced.

**CDIS4133 Introduction to Aural Rehabilitation (Sp)** Study of the technique used in the rehabilitation of speech and language problems of the hearing impaired including the role of amplification, auditory training, and speech reading in rehabilitation. Prerequisite: CDIS 3103.

**CDIS4183 Clinical Assessment of Speech and Language**

**Disorders (Fa)** Study of the basic diagnostic procedures used in speech-language pathology. Emphasis is placed on the clinical processes of assessment, including criteria for test selection, techniques in test administration, and interpretation of test results. Prerequisite: Prior coursework in CDIS.

**CDIS4213 Introduction to Speech and Hearing Science (Sp)** Study of the acoustic structure of oral speech and the auditory skills underlying speech perception. Prerequisite: CDIS 3203, CDIS 3213, CDIS 3124 and its lab component.

**CDIS4223 Language Disorders in Children (Sp)** Study of disorders of language acquisition and usage in children and adolescents, with emphasis upon the nature, assessment, and treatment of such disorders. Prerequisite: CDIS 3223.

**CDIS4253 Neurological Bases of Communication (Fa)** A study of the structures and functions of the central and peripheral nervous systems as they relate to human speech, language, and cognition. Prerequisite: CDIS 3213.

**CDIS4263 Advanced Audiology (Fa)** Study of the basic techniques used in audiological assessment of children and adults, including pure tone audiometry, speech audiometry, and special tests of hearing function. Prerequisite: CDIS 3103.

**CDIS4273 Communication Behavior and Aging (Fa)** Study of the effects upon communication of normal aspects of the aging process, from early adulthood throughout the lifespan. Changes in speech, language, and hearing functioning are identified; common alterations in communicative disorders commonly associated with advanced age are discussed.

**CDIS490V Special Problems (Sp, Su, Fa) (1-3)** Prerequisite: Advanced standing. May be repeated for up to 3 hours of degree credit.

**CDIS5102 Research Methodology in Communication Disorders (Su)** An examination of methods of research in speech-language pathology and audiology and of the use of bibliographic tools. Focuses on purposes and problems of various forms of communication disorders research, procedures and instruments employed, and reporting of research. Prerequisite: Graduate standing.

**CDIS5112 Seminar in Early Intervention (Fa)** Study of a family-centered, transdisciplinary approach to early intervention with infants and toddlers at-risk for communication disorders. Topics include early communication development, service delivery in a family context, coordination with other disciplines, and legislation mandating services. Prerequisite: CDIS 3223 or equivalent, and graduate standing.

**CDIS5121 Feeding and Swallowing Disorders Lab (Fa)** Observation and interpretation of techniques used for assessment and remediation of feeding and swallowing disorders in children and adults. Corequisite: CDIS 5122. Prerequisite: CDIS 3213 and graduate standing.

**CDIS5122 Feeding and Swallowing Disorders (Fa)** Study of the etiology, assessment, and remediation of feeding and swallowing disorders in children and adults. Prerequisite: CDIS 3213 or equivalent, and graduate standing.

**CDIS5133 Discourse Analysis and Treatment (Fa)** Study of discourse behaviors and discourse analysis procedures appropriate for communicatively disordered children and adults, along with review of management approaches associated with impaired discourse performance. Prerequisite: Previous course work in language process and disorders, and graduate standing.

**CDIS5143 Cognitive-Communication Development and Disorders (Fa)** Study of normal cognitive development, the role of communication in this development, and shifts that may occur in conjunction with various speech, language and/or hearing disorders. Prerequisite: CDIS 3223.

**CDIS5163 Seminar in Language Topics (Sp, Su, Fa)** Study of selected topics in normal and disordered language acquisition and/or language use. Implications of current research are reviewed and applied to evaluation and management of language impairment(s). Prerequisite: Graduate standing.

**CDIS5193 Seminar in Problems of Oral Communication (Sp, Su, Fa)** Investigation of research in selected problems of oral communication; recent developments in speech-language pathology and audiology; individual problems for investigation. Prerequisite: Graduate standing.

**CDIS5214 Voice and Resonance Disorders (Su)** Study of disorders of phonation and resonance, including etiologies, diagnosis, and intervention strategies. Prerequisite: Graduate standing.

**CDIS5222 Fluency Disorders (Fa)** Speech disfluency, including theoretical etiological assumptions and management consideration. Prerequisite: Graduate standing.

**CDIS5232 Seminar in Misarticulation (Sp)** Etiology, diagnosis and treatment of disorders of speech articulation. Prerequisite: Graduate standing.

**CDIS5244 Language Disorders in Adults (Sp)** Cognitive and communicative breakdown due to neurological trauma, including etiology, characteristics, assessment and treatment for aphasia, traumatic brain injury, and right hemisphere disorders. Prerequisite:

Graduate standing.

**CDIS5253 Motor Speech Disorders (Sp)** Study of motor speech production disorders related to damage to central or peripheral nervous system motor centers and pathways. Cerebral palsy, adult dysarthria, apraxia, and dysphagia are emphasized. Both theoretical and treatment considerations are addressed. Prerequisite: CDIS 4253 or equivalent, and graduate standing.

**CDIS5262 Seminar in Hearing Disorders (Su)** Study of selected topics related to hearing assessment and disorders. Topics selected to be relevant to practice of speech-language pathology and other disciplines. Prerequisite: Graduate standing.

**CDIS5273 Language, Learning and Literacy (Su)** An examination of language-based literacy skills, including consideration of development, disorders, assessment and intervention.

**CDIS528V ADV CP: Speech-Language (Sp, Su, Fa) (1-6)**

**CDIS5293 Augmentative and Alternative Communication (Fa)** Approaches to communication management with the severely and profoundly handicapped child or adult, with primary emphasis on augmentative and alternative communication assessment and intervention. Prerequisite: Graduate standing.

**CDIS5381 Diagnostic Practicum (Sp, Su, Fa)** Practicum activities in speech-language assessment. Prerequisite: Graduate standing.

**CDIS5391 Clinical Practicum: Hearing Disorders (Sp, Su, Fa)** Practicum in audiology.

**CDIS548V Off-Campus Practicum: Public School Site (Sp, Fa) (1-6)** Practicum activities in speech-language disorders in a public school setting. Prerequisite: Graduate standing.

**CDIS558V Internship: Clinical Site (Sp, Su, Fa) (3-6)** Field placement in approved clinical setting for clock hours in speech-language pathology assessment and treatment. Students in the master's program must enroll in a minimum of 3 credit hours of CDIS 558V or CDIS 578V during their last semester of graduate studies. Prerequisite: Graduate standing; completion of other required practicum courses. May be repeated for up to 6 hours of degree credit.

**CDIS568V Off-Campus Practicum: Clinical Site (Sp, Su, Fa) (1-6)** Practicum activities in speech-language disorders in an off-campus clinical site. Prerequisite: Graduate standing; completion of at least 2 semesters of CDIS 528V.

**CDIS578V Internship: Public School Site (Sp, Su, Fa) (3-6)** Field placement in approved public school setting for clock hours in speech-language pathology assessment and treatment. Students in the Master's program must enroll in a minimum of 3 credit hours of CDIS 578V or CDIS 558V during their last semester of graduate studies. Prerequisite: Graduate standing; completion of other required practicum courses.

**CDIS590V Special Problems (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**CDIS599V Seminar in Professional Issues (Sp, Fa) (1-3)** Selected topics in professional issues in speech-language pathology and audiology.

**CDIS600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**CDIS699V Seminar in Communication Sciences and Disorders (Irregular) (1-6)** Discussion of pertinent topics and issues in the discipline of communication sciences and disorders. Prerequisite: Advanced graduate standing. May be repeated for up to 18 hours of degree credit.

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### Cell & Molecular Biology (CEMB)

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**CEMB590V Special Topics in Cell and Molecular Biology (Sp, Su, Fa) (1-6)** Consideration of new areas in Cell and Molecular Biology not yet treated adequately in textbooks or in other courses. May be repeated for up to 6 hours of degree credit.

**CEMB591 Seminar in Cell and Molecular Biology (Sp, Fa)** Discussion of current topics in Cell and Molecular Biology. All graduate students in the Cell and Molecular Biology degree program must enroll every fall and spring semester in this course or an approved alternate seminar course. Prerequisite: Graduate standing. (Same as BIOL 5001) May be repeated for up to 1 hours of degree credit.

**CEMB600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**CEMB700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Graduate standing.

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### Chemical Engineering (CHEG)

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**CHEG1113 Introduction to Chemical Engineering (Fa)** Introduction to the field of chemical engineering. Industries, careers, and the curriculum are discussed. Basic chemical engineering terms, concepts, and calculations are presented. Mass balance calculations are performed and the application of computers to chemical engineering problems is introduced. Prerequisite: CHEM 1103.

**CHEG1123 Introduction to Chemical Engineering II (Sp)**

Multiple-reaction, multi-unit mass balances; vapor-liquid equilibrium, enthalpy balances; rate concepts; thermodynamics and equilibrium stage concepts; engineering economics; professionalism; ethics; computer applications; and introduction to process simulation. Prerequisite: CHEG 1113 and CHEM 1123.

**CHEG1212L Chemical Engineering Laboratory I (Sp, Fa)** Experimental measurements of various physical properties and comparison with published values and theoretical predictions. Interpretation of results using graphical, numerical and statistical tools, and presentation of results in written technical reports and oral briefings. Corequisite: Drill component. Pre or Corequisite: CHEG 1113. Prerequisite: CHEM 1103

**CHEG2133 Fluid Mechanics (Sp, Su, Fa)** Analysis and design of fluids handling equipment and systems. Application of the principles of fluid statics, fluid dynamics, compressible flow, etc. Prerequisite or Corequisite: CHEG 1123 or junior standing.

**CHEG2221 Professional Practice Seminar (Fa)** Discussion and experimental exercises in interpersonal relations, communication skills (including formal oral and written reports), group dynamics, leadership, professionalism, and ethics. Prerequisite: CHEG 1212L.

**CHEG2313 Thermodynamics of Single-Component Systems (Sp, Su, Fa)** A detailed study of the thermodynamic 'state principles,' energy and entropy balances, and their application to the solution of problems involving single-component physical systems and processes. Pre or Corequisite: MATH 2574. Prerequisite: CHEG 1123 or junior standing.

**CHEG3143 Heat Transport (Sp, Fa)** Application of the principles of conduction, convection and radiation to the analysis and design of chemical processing heat transfer equipment and systems such as double-pipe and shell-and tube heat exchangers, multiple-effect evaporators, condensers, and boilers. Prerequisite: CHEG 2133 and CHEG 2313.

**CHEG3143H Honors Heat Transport (Sp, Fa)** Application of the principles of conduction, convection and radiation to the analysis and design of chemical processing heat transfer equipment and systems such as double-pipe and shell-and tube heat exchangers, multiple-effect evaporators, condensers, and boilers. Prerequisite: CHEG 2133 and CHEG 2313.

**CHEG3153 Non-Equil. Mass Transfer (Sp, Su)** Fundamentals of chemical diffusional processes. Applications in chemical engineering design of stagewise and continuous separations. Prerequisite: CHEG 2133 and CHEG 3323.

**CHEG3153H Honors Non-Equil. Mass Transfer (Sp, Su)** Fundamentals of chemical diffusional processes. Applications in chemical engineering design of stagewise and continuous separations. Prerequisite: CHEG 2133 and CHEG 3323.

**CHEG3232L Chemical Engineering Laboratory II (Sp, Fa)** Experimental investigations of fluid flow and heat transfer. Complete written reports are required. Pre- or Corequisite: CHEG 3143. Corequisite: Drill component. Prerequisite: CHEG 1212L and CHEG 2221.

**CHEG3253 Chemical Engineering Computer Methods (Fa)** Application of computer methods to chemical engineering problems including a review of structured programming principles. Corequisite: Drill component. Pre or Corequisite: CHEG 3143. Prerequisite: MATH 3404.

**CHEG3323 Thermodynamics of Multi-Component Systems (Sp, Fa)** The use of the state principle and energy and entropy balance developed in CHEG 2313 is extended to allow processes. Physical and chemical equilibrium processes are considered in detail. Prerequisite: CHEG 2313 and MATH 2574.

**CHEG3323H Honors Thermodynamics of Multi-Component Systems (Sp, Fa)** The use of the state principle and energy and entropy balance developed in CHEG 2313 is extended to allow processes. Physical and chemical equilibrium processes are considered in detail. Prerequisite: CHEG 2313 and MATH 2574.

**CHEG3333 Chemical Engineering Reactor Design (Sp, Su)** Principles of kinetics of homogeneous and heterogeneous reactions, catalysis, and reactor design with applications, drawn from industrial processes. Prerequisite: CHEG 1123 and MATH 3404.

**CHEG3333H Honors Chemical Engineering Reactor Design (Sp, Su)** Principles of kinetics of homogeneous and heterogeneous reactions, catalysis, and reactor design with applications, drawn from industrial processes. Prerequisite: CHEG 1123 and MATH 3404.

**CHEG4163 Equil Stage Mass Transfer (Fa)** Applications of chemical engineering design to stagewise and continuous separations in systems approaching equilibrium. Prerequisite: CHEG 3323.

**CHEG4163H Honors Equil. Stage Mass Transfer (Fa)** Applications of chemical engineering design to stagewise and continuous separations in systems approaching equilibrium. Prerequisite: CHEG 3323.

**CHEG4273 Corrosion Control (Sp)** Qualitative and quantitative introduction to corrosion and its control. Application of the fundamentals of corrosion control in the process industries is emphasized. Prerequisite: CHEG 2313.

**CHEG4332L Chemical Engineering Laboratory III (Sp, Su, Fa)** Experimental investigations of heat and mass transfer. Special attention to attaining a high order of accuracy and to presenting results in complete written reports, with emphasis on quality rather than quantity work performed. Pre- or Corequisite: CHEG 3153 and CHEG 4163. Corequisite: Drill component. Prerequisite: CHEG 3232L.

**CHEG4413 Chemical Engineering Design I (Sp, Fa)** Principles of cost estimation, profitability, economic analysis, and economic balances as practiced in the chemical process industries. Special emphasis on the solution of problems involving the combination of engineering principles and economics. Corequisite: Drill component. Pre- or Corequisite: CHEG 4163 and CHEG 3153. Prerequisite: ECON 2013 (or ECON 2143) and CHEG 3143 and CHEG 3333.

**CHEG4413H Honors Chemical Engineering Design I (Sp, Fa)** Principles of cost estimation, profitability, economic analysis, and economic balances as practiced in the chemical process industries. Special emphasis on the solution of problems involving the combination of engineering principles and economics. Corequisite: Drill component. Pre- or Corequisite: CHEG 4163 and CHEG 3153. Prerequisite: ECON 2013 (or ECON 2143) and CHEG 3143 and CHEG 3333.

**CHEG4423 Automatic Process Control (Sp)** Application of mathematical modeling methods to the description of transient phenomena of interest to process engineers. Modes of control and principles of feedback control are introduced with applications to process engineering problems. Prerequisite: CHEG 3143 and CHEG 3253.

**CHEG4423H Honors Automatic Process Control (Sp)** Application of mathematical modeling methods to the description of transient phenomena of interest to process engineers. Modes of control and principles of feedback control are introduced with applications to process engineering problems. Prerequisite: CHEG 3143 and CHEG 3253.

**CHEG4443 Chemical Engineering Design II (Sp, Fa)** Responsibility for decision making is placed on the students in the solution of a comprehensive, open ended problem based on an industrial process. Both formal oral and formal written presentation of results are required. Corequisite: Drill component. Prerequisite: CHEG 4413 and CHEG 4163.

**CHEG4443H Honors Chemical Engineering Design II (Sp, Fa)** Responsibility for decision making is placed on the students in the solution of a comprehensive, open ended problem based on an industrial process. Both formal oral and formal written presentation of results are required. Corequisite: Drill component. Prerequisite: CHEG 4413 and CHEG 4163.

**CHEG4813 Chemical Process Safety (Fa)** Application of chemical engineering principles to the study of safety, health, and loss prevention. Fires and explosions, hygiene, toxicology, hazard identification, and risk assessment in the chemical process industries. Prerequisite: Senior standing.

**CHEG4813H Honors Chemical Process Safety (Fa)** Application of chemical engineering principles to the study of safety, health, and loss prevention. Fires and explosions, hygiene, toxicology, hazard identification, and risk assessment in the chemical process industries. Prerequisite: senior standing.

**CHEG488V Special Problems (Sp, Su, Fa) (1-6)** Prerequisite: Senior standing. May be repeated for up to 6 hours of degree credit.

**CHEG5013 Membrane Separation and System Design (Fa)** Theory and system design of cross flow membrane process-reverse osmosis, nanofiltration, ultrafiltration, and microfiltration-and applications for pollution control, water treatment, food and pharmaceutical processing. Prerequisite: CHEG 3153.

**CHEG5033 Technical Administration (Irregular)** Contemporary issues affecting the domestic and global Chemical Process Industries (CPI). Emphasis is on process economics, market and corporate strategy as well as advances in technology to improve corporate earnings while addressing the threats and opportunities in the CPI. Prerequisites: Senior or graduate standing.

**CHEG5113 Transport Processes I (Sp)** Fundamental concepts and laws governing the transfer of momentum, mass, and heat. Prerequisite: CHEG 2313 (or equivalent) and MATH 3404.

**CHEG5133 Advanced Reactor Design (Fa)** Applied reaction kinetics with emphasis on the design of heterogeneous reacting systems including solid surface catalysis, enzyme catalysis, and transport phenomena effects. Various types of industrial reactors, such as packed bed, fluidized beds, and other non-ideal flow systems are considered. Prerequisite: MATH 3404 and CHEG 3333.

**CHEG5213 Advanced Chemical Engineering Calculations (Sp)** Developments of and solutions of equations and mathematical models of chemical processes and mechanisms. Prerequisite: CHEG 3333 and CHEG 3253.

**CHEG5273 Corrosion Control (Sp)** Qualitative and quantitative introduction to corrosion and its control. Application of the fundamentals of corrosion control in the process industries is emphasized. Prerequisite: CHEG 2313.

**CHEG5313 Planetary Atmospheres (IR)** Origins of planetary



atmospheres, structures of atmospheres, climate evolution, dynamics of atmospheres, levels in the atmosphere, the upper atmosphere, escape of atmospheres, and comparative planetology of atmospheres. (Same as SPAC 5313)

**CHEG5333 Advanced Thermodynamics (Fa)** Methods of statistical thermodynamics, the correlation of classical and statistical thermodynamics, and the theory of thermodynamics of continuous systems (non-equilibrium thermodynamics). Prerequisite: CHEG 3323.

**CHEG5353 Advanced Separations (Sp)** Phase equilibrium in non-ideal and multicomponent systems, distillation and other methods of computation are included to cover the fundamentals of distillation, absorption, and extraction. Prerequisite: CHEG 4163.

**CHEG5513 Biochemical Engineering Fundamentals (Sp)** An introduction to bioprocessing with an emphasis on modern biochemical engineering techniques and biotechnology. Topics include: basic metabolism (prokaryote and eucaryote), biochemical pathways, enzyme kinetics (including immobilized processes), separation processes (e.g. chromatography) and recombinant DNA methods. Material is covered within the context of mathematical descriptions (calculus, linear algebra) of biochemical phenomenon. Prerequisite: CHEG 3143.

**CHEG5733 Polymer Theory and Practice (Fa)** Theories and methods for converting monomers into polymers are presented. Topics include principles of polymer science, commercial processes, rheology, and fabrication. Prerequisite: CHEM 3603 or CHEM 3613.

**CHEG5801 Graduate Seminar (Sp, Fa)** Oral presentations are given by master's candidates on a variety of chemical engineering subjects with special emphasis on new developments. Prerequisite: Graduate standing.

**CHEG588V Special Problems (Sp, Su, Fa) (1-6)** Opportunity for individual study of an advanced chemical engineering problem not sufficiently comprehensive to be a thesis. Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**CHEG600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**CHEG6123 Transport Processes II (Fa)** Continuation of CHEG 5113.

**CHEG6203 Preparation of Research Proposals (Sp)** Prerequisite: Consent of instructor.

**CHEG6801 Graduate Seminar (Sp, Fa)** Oral presentations are given by doctoral students on a variety of chemical engineering subjects with special emphasis on new developments. Prerequisite: graduate standing.

**CHEG688V Special Topics in Chemical Engineering (Sp, Su, Fa) (1-3)** Advanced study of current Chemical Engineering topics not covered in other courses. Prerequisite: Doctoral students only. May be repeated for up to 3 hours of degree credit.

**CHEG700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Candidacy.

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## Chemistry (CHEM)

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**CHEM1051L Chemistry in the Modern World Laboratory (Sp)** Laboratory exercises appropriate to Chemistry in the Modern World. Meets 2 hours per week. Corequisite: CHEM 1053.

**CHEM1053 Chemistry in the Modern World (Sp)** The impact of chemical developments upon contemporary society. Chemical problems of ecological, environmental, nutritional, economic, and sociological concern. Designed for non-science majors. Lecture 3 hours per week. Corequisite: CHEM 1051L.

**CHEM1071L Fundamentals of Chemistry Laboratory (Su, Fa)** Laboratory exercises in principles and practices of Fundamental Chemistry. Meets 2 hours per week. Corequisite: CHEM 1074.

**CHEM1074 Fundamentals of Chemistry (Su, Fa)** Fundamental principles of chemistry for students majoring in Home Economics or Nursing. Lecture 4 hours, recitation 1 hour per week. Corequisite: CHEM 1071L and related course component drill section for CHEM 1074.

**CHEM1101L University of Chemistry I Laboratory (Su, Fa)** Laboratory exercises illustrating qualitative concepts and laboratory techniques in chemistry. Meets 3 hours per week for 1 hour credit.

**CHEM1103 University Chemistry I (Su, Fa)** Survey of basic chemical principles designed as an introductory course for science, engineering or agriculture majors. CHEM 1101L is a recommended laboratory for students who do not have credit for chemistry laboratory work at the high school level. Corequisite: drill component. Pre- or Corequisite: MATH 1203 or higher (or satisfactory performance on the mathematics proficiency exam).

**CHEM1121M Honors University Chemistry II Laboratory (Sp, Fa)** Quantitative laboratory with data interpretation and exercises covering the topics of stoichiometry, thermodynamics, kinetics, chemical equilibrium, and descriptive inorganic chemistry. Designed for students in the honors programs. Laboratory 3 hours per week. Corequisite: CHEM 1123H.

**CHEM1121L University Chemistry II Laboratory (Sp, Su,**

**Fa)** Quantitative laboratory with data interpretation and exercises covering the topics of stoichiometry, thermodynamics, kinetics, chemical equilibrium, and descriptive inorganic chemistry. Laboratory 3 hours per week for 1 credit hour. Upon successful completion of 1121 with a grade of "C" or better, credit for 1101L can be requested by the student. Corequisite: CHEM 1123 and related course component drill section for CHEM 1123.

**CHEM1123 University Chemistry II (Sp, Su, Fa)** Presents the topics of periodicity, bonding, stoichiometry, thermodynamics, kinetics, and chemical equilibrium in detail. Lecture 3 hours per week. Students who pass the CHEM 1103 Freshman Chemistry Proficiency Exam and enroll in CHEM 1123/1121L and receive a grade of C or better in these courses will also receive credit for CHEM 1103/1101L. Corequisite: CHEM 1121L and related course component drill section for CHEM 1123. Prerequisite: CHEM 1103 (or CHEM 1213 or satisfactory performance on the chemistry proficiency examination) and MATH 1203 or higher or satisfactory performance on the mathematics proficiency examination.

**CHEM1123H Honors University Chemistry II (Sp, Fa)** Presents the topics of periodicity, bonding, stoichiometry, thermodynamics, kinetics, and chemical equilibrium in detail. Lecture 3 hours per week. Students who pass the CHEM 1103 Freshman Chemistry Proficiency Exam and enroll in CHEM 1123H/1121M and receive a grade of C or better in these courses will also receive credit for CHEM 1103/1101L. Corequisite: CHEM 1121M and related course component drill section for CHEM 1123H. Prerequisite: CHEM 1103 (or CHEM 1213 or satisfactory performance on the chemistry proficiency examination) and MATH 1203 or higher or satisfactory performance on the mathematics proficiency examination.

**CHEM1211L Chemistry for Majors I Laboratory (Fa)** Laboratory 3 hours per week. Students may not receive credit for both CHEM 1211L and CHEM 1101L. Corequisite: CHEM 1213.

**CHEM1213 Chemistry for Majors I (Fa)** The first half of a two-semester course designed especially for students planning to major in chemistry or biochemistry. Students may not receive credit for both CHEM 1213 and CHEM 1103. Corequisite: CHEM 1211L and related course component drill section for CHEM 1213. Pre- or Corequisite: MATH 1203 or higher or satisfactory completion of the mathematics proficiency exam.

**CHEM1221L Chemistry for Majors II Laboratory (Sp)** Laboratory 3 hours per week. Students may not receive credit for both CHEM 1221L and CHEM 1121L. Corequisite: CHEM 1223.

**CHEM1223 Chemistry for Majors II (Sp)** The second half of a two-semester course designed especially for students planning to major in chemistry or biochemistry. Students may not receive credit for both CHEM 1223 and CHEM 1123. Corequisite: CHEM 1221L and related course component drill section for CHEM 1223. Prerequisite: CHEM 1213 and CHEM 1211L (or CHEM 1103 and CHEM 1101L).

**CHEM2262 Analytical Chemistry Lecture (Sp, Fa)** Principles of chemical separations and analysis by classical and instrumental methods. The role of chemical equilibrium in physical and biological systems. Primarily for students in agriculture, biological, and physical sciences. Lecture 2 hours per week. Prerequisite: CHEM 1123 and CHEM 1121L (or CHEM 1123H and CHEM 1121M, or CHEM 1223 and CHEM 1221L, or CHEM 1074 and CHEM 1071L) and MATH 1203 or higher.

**CHEM2272 Analytical Chemistry Laboratory (Sp, Fa)** Primarily for students in agricultural, biological, and physical sciences. Provides experience in the techniques of classical and instrumental methods of chemical separation and analysis. Laboratory 8 hours per week. Pre- or Corequisite: CHEM 2262. Prerequisite: CHEM 1123 and CHEM 1121L (or CHEM 1123H and CHEM 1121M, or CHEM 1223 and CHEM 1221L or CHEM 1074 and CHEM 1071L) and MATH 1203 or higher.

**CHEM2611L Organic Physiological Chemistry Laboratory (Sp, Su)** Laboratory 3 hours per week. Corequisite: CHEM 2613.

**CHEM2613 Organic Physiological Chemistry (Sp, Su)** Survey of organic chemistry necessary for understanding of biological systems, with some related physiological chemistry. Lecture 3 hours per week. Corequisite: CHEM 2611L and related course component drill section for CHEM 2613. Prerequisite: CHEM 1074 and CHEM 1071L (or CHEM 1123 and CHEM 1121L, or CHEM 1123H and CHEM 1121M, or CHEM 1223 and CHEM 1221L).

**CHEM3203 Forensic Chemistry (Fa)** Survey of chemistry used in criminal investigations. Topics may include detection and identification of drugs, alcohol, toxins, explosives and gun powder residue. Chemical analysis of paint, ink, paper, soil, glass and fibers. Chemical detection of blood and fingerprints. Extraction of DNA from evidence, DNA fingerprinting. Prerequisite: CHEM 3613 (recommended) or CHEM 2613.

**CHEM3451L Elements of Physical Chemistry Laboratory (Fa)** Techniques of physical measurements of chemical systems; error analysis and report writing. Experiments in thermochemistry, kinetics, and measurement of properties of matter using a variety of techniques. Laboratory 4 hours per week. Corequisite: CHEM 3453.

**CHEM3453 Elements of Physical Chemistry (Fa)** Funda-

mental concepts of physical chemistry primarily for B.A. Chemistry majors and pre-professional and agriculture students, presented with some recourse to calculus and with applications to life processes and biochemistry. Lecture 3 hours per week. B.A. chemistry majors must enroll in CHEM 3451L concurrently. Prerequisite: CHEM 2262 and CHEM 2272 and PHYS 2033 and PHYS 2031L (or PHYS 2074), and MATH 2554 (or MATH 2043).

**CHEM3504 Physical Chemistry (Fa)** Introduction to atomic and molecular structure, kinetic theory of gases, and elementary statistical mechanisms. Lecture and recitation 4 hours per week. Pre- or Corequisite: MATH 2564. Prerequisite: CHEM 1123 and CHEM 1121L (or CHEM 1123H and CHEM 1121M or CHEM 1223 and CHEM 1221L) and PHYS 2074.

**CHEM3512L Physical Chemistry Laboratory (Sp)** Experimental studies of molecular structure, thermochemistry, and chemical kinetics, and the determination of other physicochemical properties of matter. Laboratory 8 hours per week. Pre- or Corequisite: CHEM 3504.

**CHEM3514 Physical Chemistry II (Sp)** Chemical thermodynamics, phase equilibria, chemical equilibrium; introduction to the structure and properties of solution, liquid state and solid state; and chemical kinetics. Lecture and recitation 4 hours per week. Prerequisite: CHEM 3504.

**CHEM3601L Organic Chemistry I Laboratory (Su, Fa)** Laboratory exercises in organic chemistry. Meets 3 hours per week. Corequisite: CHEM 3603.

**CHEM3602M Honors Organic Chemistry I Laboratory (Su, Fa)** Corequisite: CHEM 3603H and related course component drill section for CHEM 3602M.

**CHEM3603 Organic Chemistry I (Su, Fa)** Lecture 3 hours per week. Primarily for non-majors and B.A. chemistry majors who do not take the CHEM 3703/3702L-3713/3712L sequence. Corequisite: CHEM 3601L and related course component drill section for CHEM 3603. Prerequisite: CHEM 1123 and CHEM 1121L or CHEM 1123H and CHEM 1121M or CHEM 1223 and CHEM 1221L.

**CHEM3603H Honors Organic Chemistry I (Su, Fa)** Corequisite: CHEM 3602M and related course component drill section for CHEM 3603H. Prerequisite: CHEM 1123 and 1121L or CHEM 1123H and CHEM 1121M or CHEM 1223 and CHEM 1221L.

**CHEM3611L Organic Chemistry II Laboratory (Sp, Su)** Laboratory exercise in organic chemistry. Meets 3 hours per week. Corequisite: CHEM 3613.

**CHEM3612M Honors Organic Chemistry II Laboratory (Sp, Su)** Corequisite: CHEM 3613H and related course component drill section for CHEM 3612M.

**CHEM3613 Organic Chemistry II (Sp, Su)** Lecture 3 hours per week. Primarily for non-majors and B.A. chemistry majors who do not take the CHEM 3703/3702L and 3713/3712L sequence. Corequisite: CHEM 3611L and related course component drill section for CHEM 3613. Prerequisite: CHEM 3603 and CHEM 3601L (or CHEM 3603H and CHEM 3602M) or CHEM 3703 and CHEM 3702L.

**CHEM3613H Honors Organic Chemistry II (Sp, Su)** Corequisite: CHEM 3612M and related course component drill section for CHEM 3613H. Prerequisite: CHEM 3603 and CHEM 3602M.

**CHEM3702L Organic Chemistry I Lab for Majors (Fa)** Introduction to basic techniques for separation, purification, and identification of organic compounds. Lecture-discussion 1 hour, laboratory 3 hours per week. Corequisite: CHEM 3703 and related course component drill section for CHEM 3702L.

**CHEM3703 Organic Chemistry I Lecture for Majors (Fa)** Basic chemistry of the compounds of carbon. Primarily for B.S. and B.A. chemistry majors. Lecture 3 hours per week. Corequisite: CHEM 3702L and related course component drill section for CHEM 3703. Prerequisite: Chemistry major; CHEM 1123 and CHEM 1121L or CHEM 1123H and CHEM 1121M or CHEM 1223 and CHEM 1221L.

**CHEM3712L Organic Chemistry II Lab for Majors (Sp)** Continuation of CHEM 3702L and introduction to basic techniques of synthesis, isolation, and determination of structure and reactivity of organic compounds. Lecture-discussion and laboratory 8 hours per week. Corequisite: CHEM 3713 and related course component drill section for CHEM 3712L.

**CHEM3713 Organic Chemistry II Lecture for Majors (Sp)** Basic chemistry of the compounds of carbon. Primarily for B.S. and B.A. chemistry majors. Lecture 3 hours per week. Corequisite: CHEM 3712L and related course component drill section for CHEM 3713. Prerequisite: CHEM 3703 and CHEM 3702L.

**CHEM3813 Introduction to Biochemistry (Su, Fa)** Primarily for students in the agricultural, biological, and related sciences. Survey of the fundamentals of biochemistry. Credit may not be applied to the minimum hourly requirements for a B.S. major in chemistry. Lecture 3 hours per week. Prerequisite: CHEM 3613 and CHEM 3611L or CHEM 3613H and CHEM 3611M) or CHEM 3713 and CHEM 3712L or CHEM 2613 and CHEM 2611L.

**CHEM3923H Honors Colloquium (Irregular)** Covers a special topic or issue. Offered as a part of the honors program. Prerequisite: honors candidacy (may not be restricted to candidacy in chemistry).

**CHEM400V Chemistry Research (Sp, Su, Fa) (1-4)** Research problems.

**CHEM4011H Honors Seminar (Sp)** Research seminar for chemistry majors enrolled in the program. Enrollment is required each spring semester for honors students. Senior honors students must make one research presentation to graduate with honors. Prerequisite: Junior standing.

**CHEM4123 Advanced Inorganic Chemistry I (Fa)** Reactions and properties of inorganic compounds from the standpoint of electronic structure and the periodic table. Emphasis on recent developments. Prerequisite: CHEM 3514.

**CHEM4211L Instrumental Analysis Laboratory (Sp)** Provides laboratory experience in parallel with the lecture material in CHEM 4213. Laboratory 3 hours per week. Pre- or Corequisite: CHEM 4213.

**CHEM4213 Instrumental Analysis (Sp)** Provides students, especially those in the agricultural, biological, and physical sciences, with an understanding of modern instrumental techniques of analysis. Lecture 3 hours per week. Prerequisite: CHEM 2262 and CHEM 2272 and CHEM 3613 and CHEM 3611L (or CHEM 3713 and CHEM 3712L) and CHEM 3514 (or CHEM 3453).

**CHEM4723 Experimental Methods in Organic and Inorganic Chemistry (Fa)** Introduction to the application of synthetic and spectroscopic methods in organic and inorganic chemistry, including mass spectroscopy, nuclear magnetic resonance, ultraviolet-visible, and infrared spectroscopy. Other laboratory techniques applicable to chemical research will be included. Lecture 1 hour, laboratory 6 hours per week. Chemistry students may not receive graduate credit for this course and CHEM 5753. Corequisite: Drill component and Lab component. Prerequisite: CHEM 3613 and CHEM 3611L (or CHEM 3713 and CHEM 3712L) and CHEM 3504 and CHEM 3514.

**CHEM4813H Honors Biochemistry I (Fa)** The first of a two-course series covering biochemistry for undergraduate students in biology, agriculture, and chemistry. Topics covered include protein structure and function, enzyme kinetics, enzyme mechanisms, and carbohydrate metabolism. Prerequisite: CHEM 3613 and CHEM 3611L or CHEM 3613H and CHEM 3611M or CHEM 3713 and CHEM 3712L. (Same as CHEM 5813)

**CHEM4843H Honors Biochemistry II (Sp)** A continuation of CHEM 4813H covering topics including biological membranes and bioenergetics, photosynthesis, lipids and lipid metabolism, nucleic acid structure, structure and synthesis, and molecular biology. Prerequisite: CHEM 4813H (Same as CHEM 5843)

**CHEM4853 Biochemical Techniques (Sp)** Techniques for handling, purifying and analyzing enzymes, structural proteins, and nucleic acids. Lecture 1 hour, laboratory 6 hours per week. Pre- or Corequisite: CHEM 5813 or CHEM 3813.

**CHEM498V Senior Thesis (Sp, Su, Fa) (1-6)**

**CHEM5101 Introduction to Research (Sp, Su, Fa)** Introduces new graduate students to research opportunities and skills in chemistry and biochemistry. Meets 1 hour per week during which new students receive information from faculty regarding research programs in the department and training in the use of research support facilities available in the department.

**CHEM5143 Advanced Inorganic Chemistry II (Irregular)** Chemistry of metallic and non-metallic elements emphasizing molecular structure, bonding and the classification of reactions. Emphasis on recent developments. Prerequisite: CHEM 4123.

**CHEM5153 Structural Chemistry (Irregular)** Determination of molecular structure by spectroscopic, diffraction, and other techniques. Illustrative examples will be chosen mainly from inorganic chemistry. Pre- or Corequisite: CHEM 3504 and CHEM 4123.

**CHEM5223 Chemical Instrumentation (Odd years, Sp)** Use and application of operational amplifiers to chemical instrumentation; digital electronic microprocessor interfacing; software development and real-time data acquisition. Prerequisite: CHEM 4213 and PHYS 2074.

**CHEM5233 Chemical Separations (Even years, Fa)** Modern separation methods including liquid chromatography (adsorption, liquid-liquid partition, ion exchange, exclusion) and gas chromatography. Theory and instrumentation is discussed with emphasis on practical aspects of separation science. Prerequisite: CHEM 4213.

**CHEM5243 Electrochemical Methods of Analysis (Even years, Sp)** Topics will include: diffusion, electron transfer kinetics, and reversible and irreversible electrode processes; followed by a discussion of chronoamperometry, chronocoulometry, polarography, voltammetry and chronopotentiometry. Prerequisite: CHEM 4213 and MATH 2574.

**CHEM5253 Spectrochemical Methods of Analysis (Odd years, Fa)** Principles and methods of modern spectroscopic analysis. Optics and instrumentation necessary for spectroscopy is also discussed. Topics include atomic and molecular absorption and emission techniques in the ultraviolet, visible, and infrared spectral regions. Prerequisite: CHEM 4213.

**CHEM5263 Nuclear Chemistry (Odd years, Fa)** Nuclear

structure and properties, natural and artificial radioactivity, radioactive decay processes, nuclear reaction and interactions of radiation with matter. Prerequisite: CHEM 3514.

**CHEM5273 Cosmochemistry (Odd years, Sp)** Laws of distribution of the chemical elements in nature, cosmic and terrestrial abundance of elements; origin and age of the earth, solar system, and the universe. Prerequisite: CHEM 3514.

**CHEM5473 Chemical Kinetics (Sp)** Theory and applications of the principles of kinetics to reactions between substances, both in the gaseous state and in solution. Prerequisite: CHEM 3514.

**CHEM5513 Biochemical Evolution (Even years, Sp)** Abiotic synthesis of biomolecules on Earth, the origin of cells, genetic information, origin of life on Earth and elsewhere, evolution and diversity, ecological niches, bacteria, archaea, eukaryotes, novel metabolic re-shaping of the environment, life being reshaped by the environment, molecular data and evolution. Prerequisite: CHEM 5813.

**CHEM5603 Theoretical Organic Chemistry (Fa)** Introduction to the theoretical interpretation of reactivity, reaction mechanisms, and molecular structure of organic compounds. Application of theories of electronic structure; emphasis on recent developments. Prerequisite: CHEM 3514 and CHEM 3713 and CHEM 3712L.

**CHEM5633 Organic Reactions (Fa)** The more important types of organic reactions and their applications to various classes of compounds. Prerequisite: CHEM 3514 and CHEM 3713 and CHEM 3712L.

**CHEM5753 Physical Methods in Organic Chemistry (Fa)** Interpretation of physical measurements of organic compounds in terms of molecular structure. Emphasis on spectroscopic methods (infrared, ultraviolet, magnet resonance, and mass spectra). Prerequisite: CHEM 3712L and CHEM 3713 and CHEM 3514.

**CHEM5813 Biochemistry I (Fa)** The first of a two-course series covering biochemistry for graduate students in biology, agriculture, and chemistry. Topics covered include protein structure and function, enzyme kinetics, enzyme mechanisms, and carbohydrate metabolism. Prerequisite: CHEM 3712L and CHEM 3713 (or CHEM 3613 and CHEM 3611L) and CHEM 3514 (or CHEM 3453 and CHEM 3451L).

**CHEM5843 Biochemistry II (Sp)** A continuation of CHEM 5813 covering topics including biological membranes and bioenergetics, photosynthesis, lipids and lipid metabolism, nucleic acid structure, structure and synthesis, and molecular biology. Prerequisite: CHEM 5813.

**CHEM600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**CHEM6011 Chemistry Seminar (Sp, Fa)** Members of the faculty, graduate and advanced students meet weekly for discussion of current chemical research. Weekly seminar sections are offered for the Departmental seminar and for divisional seminars in biochemistry and in analytical, inorganic, nuclear, organic, and physical chemistry. Chemistry graduate students register for the Departmental seminar section and one of the divisional seminar sections each semester they are in residence. Seminar credit does not count toward the minimum hourly requirements for any chemistry graduate degree. Prerequisite: CHEM 3514 and CHEM 3712L and CHEM 3713 and senior or graduate standing. May be repeated for up to 1 hours of degree credit.

**CHEM619V Special Topics in Inorganic Chemistry (Irregular) (1-3)** Topics which have been covered in the past include: technique and theory of x-ray diffraction, electronic structure of transition metal complexes, inorganic reaction mechanisms, and physical methods in inorganic chemistry.

**CHEM6283 Mass Spectrometry (Odd years, Sp)** This course is devoted to the fundamental principles and applications of analytical mass spectrometry. Interactions of ions with magnetic and electric fields and the implications with respect to mass spectrometer design are considered, as are the various types of mass spectrometer sources. Representative applications of mass spectrometry in chemical analysis are also discussed. Prerequisite: Graduate standing.

**CHEM629V Special Topics in Analytical Chemistry (Irregular) (1-3)** Topics that have been presented in the past include: electroanalytical techniques, kinetics of crystal growth, studies of electrode processes, lasers in chemical analysis, nucleosynthesis and isotopic properties of meteorites, thermoluminescence of geological materials, early solar system chemistry and analytical cosmochemistry.

**CHEM649V Special Topics in Physical Chemistry (Irregular) (1-3)** Topics which have been covered in the past include advanced kinetics, solution chemistry, molecular spectra, nuclear magnetic resonance spectroscopy, and methods of theoretical chemistry.

**CHEM6633 Chemistry of Organic Natural Products (Irregular)** Selected topics concerned with structure elucidation and synthesis of such compounds as alkaloids, antibiotics, bacterial metabolites, plant pigments, steroids, terpenoids, etc. Prerequisite: CHEM 5603 and CHEM 5633.

**CHEM6673 Organic Reaction Mechanisms (Odd years, Fa)** A detailed description of the fundamental reactions and mechanisms of organic chemistry. Prerequisite: CHEM 5633.

**CHEM669V Special Topics in Organic Chemistry (Irregular) (1-3)** Topics which have been presented in the past include heterogeneous catalysis, isotope effect studies of organic reaction mechanisms, organometallic chemistry, stereochemistry, photochemistry, and carbanion chemistry.

**CHEM6823 Physical Biochemistry (Even years, Fa)** Physical chemistry of proteins, nucleic acids, and biological membranes. Ultracentrifugation, absorption and fluorescent spectrophotometry, nuclear magnetic resonance spectroscopy, x-ray diffraction, and other techniques. Prerequisite: (CHEM 5813 and CHEM 3514) or graduate standing.

**CHEM6863 Enzymes (Odd years, Fa)** Isolation, characterization, and general chemical and biochemical properties of enzymes. Kinetics, mechanisms, and control of enzyme reactions. Prerequisite: Graduate standing (or CHEM 5843 and CHEM 5813).

**CHEM6873 Molecular Biochemistry (Odd years, Sp)** Nucleic acid chemistry in vitro and in vivo, synthesis of DNA and RNA, genetic diseases, cancer biochemistry and genetic engineering. Prerequisite: CHEM 5813 and CHEM 5843.

**CHEM6883 Bioenergetics and Biomembranes (Even years, Sp)** Cellular energy metabolism, photosynthesis, membrane transport, properties of membrane proteins, and the application of thermodynamics to biological systems. Prerequisite: CHEM 5813 and CHEM 5843.

**CHEM700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Graduate standing. May be repeated for up to 18 hours of degree credit.

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## Chinese (CHIN)

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**CHIN1003 Elementary Chinese I (Fa)**

**CHIN1013 Elementary Chinese II (Sp)** Elementary courses stress correct pronunciation, Aural comprehension, and simple speaking ability, and lead to active mastery of basic grammar and limited reading ability.

**CHIN2003 Intermediate Chinese I (Fa)** Intermediate courses lead to greater facility in spoken language and to more advanced reading skills.

**CHIN2013 Intermediate Chinese II (Sp)** Continued development of basic speaking comprehension and writing skills and intensive development of reading skills.

**CHIN3003 Advanced Chinese (Fa)** Continues to develop speaking, listening, reading and writing skills and presents more complex forms and structures of the language as well as additional characters. Prerequisite: CHIN 2013

**CHIN3033 Conversation (Irregular)** Guided conversation practice for the post-intermediate student. Prerequisite: CHIN 2013 or equivalent.

**CHIN3103 Chinese Culture and Film (Fa)** A course based on film and readings designed to give insight into Chinese civilization and culture with special emphasis on ethnicity, modern history, contemporary society, education, language, customs, and visual arts. This course is taught in English. May be repeated for up to 6 hours of degree credit.

**CHIN3983 Special Studies (Irregular)** May be offered in subject not specifically covered by courses otherwise listed. May be repeated for up to 6 hours of degree credit.

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## Curriculum and Instruction (CIED)

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**CIED1002 Introduction to Education (Sp, Su, Fa)** Integrates psychological, sociological, and philosophical foundations of education with concurrent involvement in field experiences. Encourages prospective teachers to become reflective practitioners by emphasizing organization of school systems, planning and implementation of effective classroom environments, development of teaching styles, and new directions in education. Corequisite: CIED 1011.

**CIED1003 Introduction to Technology in Education (Sp, Su, Fa)** A study of computer technology as it relates to teacher education. This course introduces students interested in teacher education to the knowledge and skills required to demonstrate their proficiency in technology and learning.

**CIED1011 Introduction to Education: Practicum (Sp, Su, Fa)** A 30-hour early field experience designed to give prospective teachers opportunities to observe and participate in a variety of school settings. Includes a variety of field-based activities to encourage personal reflection. Special focus upon organization of school systems, effective classroom environments, teaching styles and new directions in education. Corequisite: CIED 1002. (Same as CATE 1001,PHED 1003)

**CIED3001 Early Childhood Education Practicum (Sp, Su, Fa)** This practicum course provides opportunities for students to observe and practice providing instruction and guidance in preschool settings. Corequisite: CIED 3003.

**CIED3003 Early Childhood Education (Sp, Su)** The study of kindergarten and preschool programs: social context of early childhood education, purposes, research basis, curriculum development,

methods, and materials. Corequisite: CIED 3001. Prerequisite: CIED 1002 and CIED 1011.

**CIED3023 Survey of Exceptionalities (Sp, Su, Fa)** A survey of the characteristics of students with exceptional needs. Reviews the definitions of exceptionalities, learning and behavior characteristics of individuals with exceptionalities and the legal basis for the education of persons with exceptionalities in both elementary and secondary schools. Prerequisite: CIED 1002 and CIED 1011; or MUED 2012; or CATE 1001; or AGED 1031.

**CIED3033 Classroom Learning Theory (Sp, Su, Fa)** A survey of the major theories of learning with special emphasis on human learning and implications for education. Prerequisite: CIED 1002 and CIED 1011; or MUED 2012; or PHED 1003; or CATE 1001; or AGED 1031; and PSYC 2003.

**CIED3043 Introduction to Middle Level Principles and Methods (Fa)** A comprehensive overview of the key components, principles, methodologies, and research foundations to middle level education. Reflective activities and site-based field experience are integrated with course content to provide continuity between theory and practice. Portfolio expectations will be a primary means of course evaluation. Prerequisite: CIED 3053.

**CIED3053 The Emerging Adolescent (Sp)** This course is a study of the developmental characteristics (social, emotional, physical, moral, and intellectual) of early adolescents (ages 10-15 years). The implications of these changes for motivation, instruction, learning, and classroom management in the classroom are emphasized. Course has field component. Prerequisite or Corequisite: CIED 3033. Prerequisite: CIED 1011 and CIED 1002 and PSYC 2003.

**CIED3063 Literacy Strategies for Middle Level Learners (Sp)** This course is designed to examine theories and practice regarding literacy development and assessment grounded in the knowledge of the characteristics of the middle level learner. A ten-hour field experience is required. Corequisite: CIED 3073. Prerequisite: CIED 3043.

**CIED3063H Honors Literacy Strategies for Middle Level Learners (Sp)** This course is designed to examine theories and practice regarding literacy development and assessment grounded in the knowledge of the characteristics of the middle level learner. A ten-hour field experience is required. Corequisite: CIED 3073 and honors candidacy. Prerequisite: CIED 3043.

**CIED3073 Early Adolescent Literature (Sp)** A study of rationales and strategies for incorporating early adolescent literature across the middle level curriculum. Includes an examination of genres and selected texts from each. Corequisite: CIED 3063. Prerequisite: CIED 3043.

**CIED3073H Honors Early Adolescent Literature (Sp)** A study of rationales and strategies for incorporating early adolescent literature across the middle level curriculum. Includes an examination of genres and selected texts from each. Corequisite: CIED 3063. Prerequisite: CIED 3043 and honors candidacy.

**CIED3093 Essentials of Literacy (Sp, Fa)** An undergraduate foundational course focusing on literacy development and processes of children from the emergent to developmental stages, materials and effective research-based teaching strategies for classroom practice. Not for credit in Childhood Education (CHED) degree program.

**CIED3103 Children's Literature (Fa)** A survey of children's literary works, authors, and illustrators with emphasis on the preschool and primary grade literature. Corequisite: CIED 3113. Prerequisite: PSYC 3093.

**CIED3103H Honors Children's Literature (Fa)** A survey of children's literary works, authors, and illustrators with emphasis on the preschool and primary grade literature. Corequisite: CIED 3113. Prerequisite: PSYC 3093.

**CIED3113 Emergent and Developmental Literacy (Fa)** This course focuses on theories of children's emerging literacy and on the continuing development of literacy abilities in pre-kindergarten and early elementary years. Corequisite: CIED 3103. Prerequisite: PSYC 3033 or PSYC 3093.

**CIED3113H Honors Emergent and Developmental Literacy (Fa)** This course focuses on theories of children's emerging literacy and on the continuing development of literacy abilities in pre-kindergarten and early elementary years. Corequisite: CIED 3103. Prerequisite: PSYC 3033 or PSYC 3093.

**CIED3123 Mathematics Methods (Sp, Su)** An examination of the content of elementary mathematics courses. Special emphasis given to methods of teaching the content as well as enrichment materials.

**CIED3133 Integrated Social Studies (Sp, Fa)** Focuses on the methodology of facilitating pre-K and elementary children's development in language arts and social studies. Integrates the curriculum and teaching strategies in language arts and social studies.

**CIED3143 Teaching Science (Sp, Fa)** Study of the methods and materials in teaching science. Classroom applications of teaching strategies with analysis of teacher effectiveness in seminar settings are emphasized.

**CIED3263 Language Development for the Educator**

**(Sp, Fa)** Nature of speech-language development in preschool and school-aged children, including cognitive prerequisites, social contexts, and relationships between language acquisition and literacy. Language differences (dialectal, bilingual) and speech-language disorders are explored. The role of the educator in facilitating language acquisition is emphasized.

**CIED4003 Elementary Seminar (Sp, Fa)** This course is designed to synthesize the foundational content presented in the Bachelor of Science in Education, Elementary Education program. It focuses on refinement of generalized knowledge to accommodate specialized content relevant to young children.

**CIED4023 Teaching in Inclusive Secondary Settings (Su)** This course is designed to prepare pre-service teachers to teach in inclusive classroom settings at the secondary level. Course content will focus on the ways in which exceptionality, specifically focused on high-incidence disabilities and culture, specifically focused on English language learners mediate the learning experiences of secondary level students.

**CIED4101 Practicum (Sp)** Practicum. Corequisite: CIED 4113 and CIED 4128.

**CIED4101H Honors Practicum (Sp)** Practicum. Corequisite: CIED 4113 and CIED 4128.

**CIED4113 Integrated Communication Skills (Sp)** Focuses on the methodology of facilitating pre-kindergarten, kindergarten, and early elementary children's literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Corequisite: CIED 4128 and CIED 4101. Prerequisite: PSYC 3093, CIED 3103, and CIED 3113.

**CIED4113H Honors Integrated Communication Skills (Sp)** Focuses on the methodology of facilitating pre-kindergarten, kindergarten, and early elementary children's literacy development. Emphasis is on the integration of the communication skills of reading, writing, speaking, and listening across the curriculum. Corequisite: CIED 4128 and CIED 4101. Prerequisite: PSYC 3093, CIED 3103, and CIED 3113.

**CIED4123 Literacy Assessment (Sp, Fa)** An undergraduate course focusing on literacy assessment and intervention for prospective classroom teachers. Participants become familiar with assessment procedures and instruments for identifying student strengths and weaknesses in literacy, determining effective intervention strategies for literacy improvement, and principles of reporting assessment and intervention outcomes. Prerequisite: CIED 3093.

**CIED4131 Practicum in Secondary Education (Sp, Su, Fa)** This practicum is a requirement for entry into the Secondary Master of Arts (M.A.T.) in teaching program. Students will be involved in documented experiences with children for a minimum of 60 hours with at least 20 of them being in schools with children in grades 7 through 12.

**CIED4133 Measurement, Research, and Readings (Sp, Su, Fa)** This course is designed to provide an introduction to educational assessment, research methods, and what research has to say about trends and topics in elementary education.

**CIED4143 Curriculum Design (Su)** A course in the design and adaptation of curriculum for students in regular, elementary classrooms. Theoretical bases and curriculum models will be reviewed.

**CIED4153 Classroom Management (Sp, Fa)** This course focuses on a number of different management techniques for Pre-K through upper elementary grades that can be used in general education settings.

**CIED4163 Senior Project (Sp, Fa)** This course is designed to provide students with the research skills necessary to complete their senior project.

**CIED4173 Student Teaching (Sp, Fa)** This course is a field-based practicum experience.

**CIED4201 Seminar: Introduction to Professionalism (Sp)** Examines the legal, ethical, and moral aspects of teaching and involvement in professional organizations. Students participate in field experiences, simulations, and discussions. Corequisite: CIED 4210 and CIED 4211 and CIED 4221.

**CIED4210 Practicum: Critical and Creative Thinking Skills (Sp, Su, Fa)** Practicum in which students apply theory to practice. Emphasis is on actual application of theory to their own creative and critical thinking skills, methods for transferring the knowledge of theory to classroom application in their curricular area(s), and curriculum development. Corequisite: CIED 4201 and CIED 4221.

**CIED4211 Seminar: Critical and Creative Thinking Skills (Sp, Su, Fa)** Provides a basic understanding of how to incorporate creative thinking skills across the curriculum. Students are introduced to a variety of strategies as well as site-based field experiences which provide continuity between theory and practice. Corequisite: CIED 4201 and CIED 4210 and CIED 4221.

**CIED4221 Seminar: Structure of the Disciplines (Sp, Su, Fa)** An analysis of the cognitive properties and organizations possible for subject disciplines. Looks at ways to discover understanding of a discipline and how to teach students to discover understanding. Corequisite: CIED 4201 and CIED 4210 and CIED 4211.

**CIED4323 Instructional Design for Teachers (Sp, Su, Fa)** Study of the design of instruction for students with exceptionalities. Emphasis is placed on synthesizing a broad range of existing and emerging perspectives and methods of instruction and applying them to practical classroom practice. Prerequisite: CIED 3023.

**CIED4413 Acquiring a Second Language (Fa)** The course gives an introduction to the basics in research and learning theories involved in the acquisition of second languages and cultures, particularly of English.

**CIED4423 Teaching a Second Language (Sp, Fa)** This course gives an introduction to different methods used to teach individuals a second language, with an emphasis on teaching English as a second language.

**CIED4513 Teaching Children with Mild Disabilities (Sp, Fa)** This course is a study of the characteristics of young students with disabilities and methods for teaching this group of students. The course will provide future teachers with an understanding of interventions useful in teaching individuals with special learning needs during grades P-4.

**CIED4513H Honors Teaching Children with Mild Disabilities (Sp, Fa)** This course is a study of the characteristics of young students with disabilities and methods for teaching this group of students. The course will provide future teachers with an understanding of interventions useful in teaching individuals with special learning needs during grades P-4.

**CIED4523 Teaching Children with Severe Disabilities (Sp, Su)** This course is a study of the characteristics of young students with severe disabilities and methods for teaching this group of students. The course will provide future teachers with an understanding of interventions useful in teaching individuals with special learning needs during grades P-4.

**CIED5003 Childhood Seminar (Sp)** This course is designed to synthesize the foundational content presented in the Master of Arts in Teaching core courses. It focuses on refinement of the generalized knowledge to accommodate specialized content children. Professional attitudes, knowledge and skills relevant to young children. Professional attitudes, knowledge and skills applicable to today's early childhood educator are addressed. Prerequisite: Admission to the CHED M.A.T.

**CIED5012 Measurement, Research, and Statistical Concepts for Teachers (Su)** An introduction to constructing, analyzing, and interpreting tests, types of research and the research process, qualitative and quantitative techniques for assessment, and descriptive and inferential statistics.

**CIED5013 Measurement, Research and Statistical Concepts in the Schools (Su)** An introduction to constructing, analyzing, and interpreting tests; types of research and the research process; qualitative and quantitative techniques for assessment; and descriptive and inferential statistics. Prerequisite: Admission to graduate school.

**CIED5022 Classroom Management Concepts (Fa)** A number of different classroom management techniques are studied. It is assumed that a teacher must possess a wide range of knowledge and skills to be an effective classroom manager. Prerequisite: Admission to the M.A.T. program.

**CIED5032 Curriculum Design Concepts for Teachers (Sp)** The design and adaptation of curriculum for students in regular and special classrooms. Theoretical bases and curriculum models are reviewed. Concurrent clinical experiences in each area of emphasis are included. Prerequisite: Admission to the M.A.T. program.

**CIED5043 Content Area Reading in Elementary Grades (Su, Fa)** This course teaches the integration of reading and writing in the content areas. Reading and writing as integrated strands of the language process is presented in the context of instructional principles and suggested teaching practices. A solid research base is emphasized while keeping the focus on practical application. Prerequisite: Admission to the M.A.T. program.

**CIED5052 Seminar: Multicultural Issues (Su)** This seminar provides an introduction to the major concepts and issues related to multicultural education. The ways in which race, ethnicity, class, gender, and exceptionality influence students' behavior are discussed. Prerequisite: Admission to the M.A.T. program.

**CIED5053 Multicultural Issues in Elementary Education (Su)** This course provides an introduction to the major concepts and issues related to multicultural education in elementary classrooms. The ways in which race, class, gender and exceptionality influence students' behavior are discussed. Prerequisite: Admission to grad. school.

**CIED5062 Literacies Across the Curriculum (Sp)** This course teaches the integration of reading, writing, and new literacies in the content areas. Theory and strategy are presented as integrated strands of the language process as presented in the context of instructional principles and suggested teaching practices. A solid research base is emphasized while keeping the focus on practical application. Prerequisite: Admission in Secondary M.A.T. Program.

**CIED5063 Contemporary and Futuristic Concerns of**

**Childhood Education (Sp)** Historical, Contemporary and Future Perspective of Childhood Education. A problems course in childhood education which deals with historical, current and future concerns. These early childhood concerns include demographic trends, family composition and change, instructional models, social/political/economic issues, parent/community involvement, and evolving professional roles. Prerequisite: Admission to the CHED M.A.T. program.

**CIED5073 Case Study in Childhood Education (Sp)** Provides the students with experience in conducting case studies related to childhood education. In addition, students gain knowledge regarding practices used in ethnographic research. Prerequisite: Admission to M.A.T. program.

**CIED508V Childhood Education Cohort Teaching Internship (Sp, Fa) (1-6)** May be repeated for up to 6 hours of degree credit.

**CIED5093 Methods of Instruction for Middle Level I (Su)** A study of methods and materials in the special content areas (math, science, English/language arts, and social studies). The planning of instruction, microteaching, and the development of middle school instructional materials are included. Prerequisite: Admission to M.A.T. program.

**CIED5103 Advanced Middle Level Principles (Sp)** An in-depth examination of recent research on the major issues, practices, and policies for middle level education. Emphasis is on analysis of cutting edge issues germane to the life, education, and welfare of the early adolescent via the integration of theory and practice. Prerequisite: Admission to Masters of Arts in Teaching program.

**CIED5113 Reading in Middle Schools (Sp, Su, Fa)** An overview of methods and materials for teaching reading to early adolescents. Reflective activities and site-based field experiences are integrated with course content to provide continuity between theory and practice. Portfolio expectations will be a primary means of course evaluation. Prerequisite: Admission to the middle level education program and CIED 3113.

**CIED5123 Writing Process Across the Curriculum (Middle Level) (Sp)** This course will provide an overview of the research, and methods for incorporating writing across all curriculum. Writing as a process will be emphasized. Reflective activities and site-based field experience will be integrated into the course content. Prerequisite: Admission to M.A.T. Program.

**CIED5132 Research in Middle Level Curriculum and Instruction (Fa)** An introduction to inquiry and research in middle level curriculum and instruction. It examines the principles, strategies, and techniques of research, especially qualitative inquiry. Practicum in educational research and evaluation is done as part of the class. Prerequisite: Admission to the MAT program.

**CIED5143 Internship: Middle Level (Sp, Su, Fa) (1-6)** The internship for middle level education is an extended field experience in which a pre-service teacher integrates knowledge and skills developed in education classes with practice in the field. Prerequisite: Admission to the M.A.T. program.

**CIED5162 Applied Practicum (Fa)** Provides laboratory experiences for RDNG 5123 (Literacy Assessment) and RDNG 113 (Reading in Early Childhood Education). Corequisite: CIED 5183 and CIED 5173. Prerequisite: Admission to the M.A.T. program.

**CIED5173 Literacy Assessment and Intervention (Su, Fa)** Focuses on assessment of young children's literacy skills. Techniques discussed include informal observation, miscue analysis, and portfolio assessment. Prerequisite: Admission to graduate school.

**CIED5183 Readings in Early Childhood Education (Fa)** Will continue to develop understandings of classic studies and will explore the impact these have had on the most recent issues in early childhood education. Prerequisite: Admission to the CHED M.A.T.

**CIED5193 Methods of Instruction for Middle School II (Fa)** Second special methods course for teaching at the middle level. Emphasizes further refinement of teaching skills and methods; the integration of the sciences, mathematics, and technology; science, technology, and society (STS) issues; and the integration of social studies and English language arts. Prerequisite: CIED 5092 and admission to the M.A.T. program.

**CIED5223 Issues and Principles of Secondary Education (Su)** This course provides an introduction to the Secondary Education M.A.T. program. It provides the student with information about foundation issues in education, including history and philosophy of American Education, current trends and issues in education, psychological and social theories of education, characteristics of learners, and learning processes. Prerequisite: Admission to M.A.T. degree program.

**CIED5232 Interdisciplinary Studies (Sp, Su, Fa)** Introduction to the nature of interdisciplinary study: curricular content, course planning (topics and themes), instructional strategies, and evaluation and assessment. Prerequisite: Admission to the M.A.T. program.

**CIED5243 Special Methods of Instruction I (Su)** Study of the methods and materials in the special content areas. Includes philosophical, cognitive, and psychological dimensions of teaching the content area. The planning of instruction, microteaching, and the

development of instructional materials are included. Prerequisite: Admission to the M.A.T. program.

**CIED5253 Special Methods of Instruction II (Fa)** Study of the methods and materials in the special content areas. Classroom applications of teaching strategies with analysis of teacher effectiveness in seminar settings. Prerequisite: Admission to the M.A.T. program.

**CIED5262 Special Methods of Instruction III (Sp)** Study of the methods and materials in the special content areas. The focus is on student-centered and interdisciplinary teaching strategies. Extended content units are developed and implemented in the partnership school setting. Prerequisite: Admission to the M.A.T. Program.

**CIED5263 Measurement and Evaluation (Sp, Su, Fa)** A study of measurement, testing, and evaluative procedures including types of tests, abuses of tests, test construction, scoring, analysis and interpretation, statistical methods, and alternative evaluation and assessment techniques. Prerequisite: Admission to the M.A.T. program.

**CIED5273 Research in Curriculum and Instruction (Sp, Su, Fa)** An introduction to inquiry and research in curriculum and instruction. It examines the principles, strategies, and techniques of research, especially qualitative inquiry. Qualitative method in assessment and evaluation are considered. Practicum in educational research and evaluation is done as part of the class. Prerequisite: Admission to the M.A.T. program.

**CIED528V Secondary Cohort Teaching Internship (Sp, Su, Fa) (1-6)** May be repeated for up to 6 hours of degree credit.

**CIED5293 Special Methods, Interdisciplinary Section (Sp)** The third and final part of the middle level special methods course. Provides interns with the knowledge, dispositions, and skills for developing an interdisciplinary course of study in conjunction with the members of their interdisciplinary team. Prerequisite: CIED 5092 and CIED 5913 and admission to M.A.T. program.

**CIED5323 Transition Planning for Persons with Disabilities (Sp)** Prepares students to plan, evaluate, and implement transition programs within both regular and special classrooms at the elementary, middle and secondary school levels.

**CIED532V Practicum in Special Education (Irregular) (1-6)** Supervised field experiences in special education programs, schools, institutions, and other facilities for exceptional children.

**CIED5343 Applied Classroom Management (Fa)** An advanced course in managing behaviors in students with exceptionalities. Students are provided with experiences in applying theoretical bases of classroom management through identifying, assessing graphing, and analyzing behavioral data and implementing management plans. Ethical issues in classroom management are addressed.

**CIED5353 Teaching Students with Diverse Needs in Middle Education Settings (Irregular)** To provide future scholar-practitioners with a knowledge base concerning the issues involved in the successful instruction of persons with special learning needs during middle school years.

**CIED5393 Introduction to Linguistics (Fa)** This course is an introduction to human language. The goal is to understand what it means to speak a language, including an introduction to phonetics and phonology (specifically the sound system of American English), morphology (the rules of English at the word level), syntax (rules that govern sentence level language), semantics (meanings of words) and sociolinguistics (or the study of language use in its social context).

**CIED5403 Early Childhood Education: Rationale and Curriculum (Irregular)** Rationale and curriculum of an early childhood education program, with special attention given curricular frameworks and professional organization policies.

**CIED5423 Curriculum Reconstruction (Sp, Su, Fa)** Changes in curriculum development and design as related to changing social/economic/political arenas. Theories of curriculum development, implementation and evaluation are researched.

**CIED5433 Methods and Materials for Teaching Children's and Adolescent Literature (Sp, Su, Fa)** Issues and trends in children's literature. Contemporary works are evaluated and reviewed based on changing social political conditions. Multicultural approach to children's literature is emphasized. Prerequisite: undergraduate course in children's literature.

**CIED5453 Evaluation Techniques (Irregular)** Evaluation of learning using traditional means of assessment as well as alternative or authentic assessment techniques.

**CIED5473 Advanced Course in Children's Literature (Irregular)** Compares and contrasts contemporary award winning books with children's classics, analyzing elements of style. Focuses on use of rhetorical devices. Prerequisite: CIED 3103 and CIED 5433.

**CIED5483 Teaching Mathematics (Irregular)** Content, methods, and materials for teaching multiple strands of elementary school mathematics. Emphasis on principles and procedures of a conceptual and integrated approach to learning mathematics. Prerequisite: Undergrad coursework in teaching elementary or early childhood mathematics.

**CIED5493 Teaching Social Studies (Irregular)** Purpose,

content, psychology, materials, and methods for teaching the social sciences in the elementary school. Emphasis on principles and procedures for combining the social studies with other areas of the curriculum in broad unit instruction. Prerequisite: Undergraduate coursework in teaching elementary or early childhood social studies.

**CIED5503 Teaching Science (Sp, Su, Fa)** The influence of science on the community, on the home, and the child. Use of science in the living and learning of the child at school.

**CIED5513 Sound System of American English (Fa)** This course will study the structure and development of American English (AE). Topics include: 1) the structure/systems of American English pronunciation, 2) vowels, 3) consonant system (including such features as minimal pairs, 4) prosody, intonation, rhythm, and stress, and 5) regionalism and social varieties, and 6) pedagogical approaches to teaching the features of American English.

**CIED5533 Teaching Language Arts (Sp, Su, Fa)** The place of the language arts in the elementary curriculum. Exploration of materials, content, practices, and methods, used in reading, speaking, listening, and writing experiences.

**CIED5543 Structures of American English (Sp, Su)** This course provides an introduction to the grammars of English, including (but not restricted to) traditional, structural, and transformational-generative (universal grammar). It includes approaches to the teaching of all types of grammars.

**CIED5563 Teaching Internship/Action Research (Irregular)** During this course, Master's candidates will be provided with classroom time to prepare to teach and then will be assigned to a classroom or classrooms. During this time the candidates will have an opportunity (under supervision) to observe, to teach and to participate in classroom activities. Additionally, candidates will research some area of their own pedagogy relevant to the experience.

**CIED5573 Foundations of Literacy (Sp, Su, Fa)** Teaching of reading to children; techniques, research, and modern practices.

**CIED5583 Correlates of Reading Process (Sp, Su, Fa)** The developmental program is emphasized through a student of the reading process. Learning theory and research are related to reading instruction and materials through the development and application of evaluative criteria based on an understanding of reading process. Prerequisite: CIED 5573.

**CIED5593 Advance Diagnosis and Intervention (Sp, Su, Fa)** Emphasizes the diagnosis and remediation of reading difficulties in the classroom setting. Students are expected to become familiar with cause of reading failure, diagnosis instruments and procedures, principles of report writing, and corrective instructional methods and materials. The course is open to graduate students with instructor's consent. Enrollment limited to 20. Prerequisite: CIED 5573.

**CIED5613 Contemporary Issues in Education (Sp, Su, Fa)** A study of issues pertaining to the goals, objectives, organization, and curriculum of the schools with an analysis of the teacher's role in dealing with current concerns in these areas.

**CIED5623 The School Curriculum (Sp, Su, Fa)** General principles and techniques of selecting and organizing curricular materials.

**CIED5633 Analysis of Instruction (Sp, Su, Fa)** A survey of the research and literature related to the systematic study of the field of teaching. An examination of the definitions of teaching and the knowledge base on which teaching is predicated. A study of the implications of the research of effective teaching and the key curricular and instructional issues.

**CIED5653 Methods of Middle School Instruction (Sp, Su, Fa)** Philosophy, rationale, and instructional practices of middle school instruction. Prerequisite: Graduate standing.

**CIED567V Teaching Foreign Cultures in Social Studies Curricula (Sp, Su, Fa) (1-6)** Extensive examination of foreign cultures (West Europe, USSR, China, Latin America) and methods of teaching about them in secondary school social studies.

**CIED5683 Adolescent Literature (Sp, Su, Fa)** Content course in adolescent literature including selection, reading, evaluation, and psychological basis of classic and contemporary works. Prerequisite: PSYC 3093 or equivalent.

**CIED5723 Nature and Needs of Persons with Mild Disabilities (Fa)** Educational, psychological, and social characteristics of individuals who have mild disabilities with emphasis on educational methods and modifications. Prerequisite: CIED 3023.

**CIED5733 Inclusive Practices for Diverse Populations (Su)** An advanced study of the characteristics of persons with exceptional learning needs and the provision of appropriate instruction in the general education classroom. Prerequisite: Graduate status.

**CIED5743 Teaching Persons With Physical and Health Disabilities (Sp)** This course is an advanced course at the master's level in the specialty studies. The Scholar Practitioner model at this level will pursue an in-depth study of the characteristics, needs, and methods for teaching of persons with physical and health disabilities while emphasizing advance learning in the specialty studies and the social and behavioral studies in the substantive areas. Prerequisite: Graduate status.

**CIED5753 Nature and Needs of Persons with Serious Emotional Disorders (Irregular)** A survey of the educational, psychological, and social characteristics of individuals with serious emotional disorders. Four major categories of behaviors (personality disorders, pervasive developmental disorders, and learning/behavior disorders) are reviewed in relationship to identification, assessment, and program intervention within the public school setting. Prerequisite: CIED 3023.

**CIED5763 Teaching Children with Severe Disabilities (Sp)** Methods and materials for teaching students with severe handicaps, including severe mental retardation, serious emotional disturbance, and severe physical disabilities.

**CIED5773 Methods for Young Children with Disabilities (Irregular)** This course is one of the substantive core courses required of all students being recommended for the P-4 Instructional Specialist license. The Scholar-Practitioner Model at this level provides an introduction to the education of young children with special learning needs and a foundation for the developing professional.

**CIED5783 Professional and Family Partnerships (Sp)** This course is an advanced course at the master's level in the specialty studies. The Scholar Practitioner model at this level will pursue an in-depth study of family-school partnerships from early childhood through the transition to adulthood while emphasizing advance learning in the specialty studies and the social and behavioral studies in the substantive areas. Prerequisite: Admission to graduate school.

**CIED5793 Practicum in Literacy (Sp, Su, Fa)** Laboratory experience in which students diagnose reading difficulties and practice remedial measures under the direct supervision of the instructor. Emphasis is given to continuous diagnosis and to the use of commercially produced materials and trade books in remediation. Enrollment limited to 15. Prerequisite: CIED 5593.

**CIED5803 Nature and Needs of the Gifted and Talented (Fa)** Educational, psychological, and social characteristics of gifted and talented children. Prerequisite: Graduate standing.

**CIED5813 Curriculum Development in Gifted and Talented (Sp)** Examines the various models for developing curriculum and providing services for students identified for gifted programs. Prerequisite: CIED 5803.

**CIED5823 Gifted and Talented (Structured) Practicum (Su)** Supervised field experience in gifted education programs, schools, institutions, and other facilities for gifted/talented children. Prerequisite: CIED 5813.

**CIED5833 Gifted and Talented (Flex) Practicum (Fa)** Students design and implement an individualized practicum experience (Type III Renzulli) that provides the opportunity to refine and enhance personal attitudes, beliefs, and skills in gifted education. Prerequisite: CIED 5823.

**CIED5873 Assessment of Exceptional Students (Fa)** Methods and techniques of assessment of children in all areas of exceptionality with emphasis on diagnosis and classification.

**CIED5883 Research in Special Education (Irregular)** Review of research in special education including all areas of exceptionality with emphasis on diagnosis and classification.

**CIED5893 Organization, Administration and Supervision of Special Education (Irregular)** Procedures, responsibilities and problems of organization, administration, and supervision of special education programs.

**CIED5923 Second Language Acquisition (Sp)** This is one of four courses leading to Arkansas approved endorsement for teaching English as a Second Language (ESL). The course gives an introduction to the basics in research and learning theories involved in the acquisition of second languages and cultures, particularly ESL.

**CIED5933 Second Language Methodologies (Fa)** This is one of a series of four courses leading to Arkansas approved endorsement for teaching English as a Second Language (ESL). The course introduces the basics in approaches, methodologies, techniques, and strategies for teaching second languages, especially ESL.

**CIED5943 Teaching People of Other Cultures (Sp)** This is one in a series of four courses leading to Arkansas approved endorsement for teaching English as a Second Language (ESL). The course focuses on cultural awareness, understanding cultural differences, and instruction methods for integrating second cultures, especially the culture of the United States, into the curriculum.

**CIED5953 Second Language Assessment (Sp)** This is one in a series of four courses leading to Arkansas approved endorsement for teaching English as a Second Language (ESL). The course introduces basic methods for testing, assessing and evaluating second language, especially ESL, learners for placement purposes and academic performance.

**CIED5973 Practicum in Secondary Education (Sp, Fa)** Students will engage in action research in a school setting to advance their knowledge of teaching and learning venues including schools and informal learning environments. Prerequisite: Permission.

**CIED5983 Practicum in C & I (Sp, Su, Fa)** This course will provide degree candidates with advance knowledge of teaching in the elementary or secondary schools. This will be accomplished through

a semester-long practicum during which an action research project will be designed, enacted, and reported. Prerequisite: Admission to the M.Ed. Program. May be repeated for up to 6 hours of degree credit.

**CIED599V Special Topics (Sp, Su, Fa) (1-18)** May be repeated for up to 18 hours of degree credit.

**CIED6013 Curriculum Development (Fa)** Principles and concepts of curriculum and development, with an analysis of the factors basic to planning, the aims of the educational program, the organization of the curriculum, curriculum models, and elements desirable in the curriculum of schools.

**CIED6023 Instructional Theory (Irregular)** Study of psychological, anthropological, sociological, and educational theories of instruction and learning. Emphasis is placed on synthesizing a broad range of existing and emerging perspectives in understanding individual, interactional and contextual phenomena of instruction and learning. Prerequisite: EDFD 5373.

**CIED6033 Content Specific Pedagogy (Irregular)** This course explores the relationship between the content of courses taught in schools and the pedagogical principles that the teaching of the content requires. Students will discuss and synthesize findings from the research literature and from personal investigation. Prerequisite: CIED 6203.

**CIED6043 Analysis of Teacher Education (Irregular)** This course examines issues, problems, trends, and research associated with teacher education programs in early childhood, elementary, special education, and secondary education. Prerequisite: CIED 6023.

**CIED6053 Advanced Assessment (Sp)** This course provides a survey of assessment methods used to evaluate students' levels of performance in educational settings. Prerequisites: Admissions to EdS or PhD.

**CIED6063 Systemic Change In Education (Sp)** This course is designed to critically examine education and society and interplay their interdependence between them, to differentiate between meaningful and superficial change, and to explore the agents of change in a diverse and complex social environment. Prerequisites: Admission to Ed.S. or Ph.D program.

**CIED6073 Seminar in Developing Creativity (Irregular)** A study of the facets of creativity, how they can be applied to be used in one's everyday life, how they can be applied in all classrooms, and how to encourage the development of these in students.

**CIED6083 Piaget's Theory and Instruction (Odd years, Sp)** Piaget's theory has been applied to classroom instruction in various settings. This course will investigate the theory in depth, study classroom application, and students will devise application. Prerequisite: CIED 6023.

**CIED6233 Organization of Reading Programs (Sp, Su, Fa)** Study of the problem of organizing the classroom, individual school, and school system, for the improvement of reading instruction. Emphasis is given to the development of program organization rationale based on requirements of the teaching-learning setting.

**CIED6313 Issues, History, and Rationale of Science Education (Irregular)** This course is the foundation experience for those interested in the discipline of science education. It provides an overview of the fundamental issues in and vocabulary of science education. The course includes the research basis for science teaching, the literature of science education, and the issues and controversies surrounding the teaching of science.

**CIED6333 Nature of Science: Philosophy of Science for Science Educators (Irregular)** The Nature of Science is a hybrid arena consisting of aspects of the philosophy, history and sociology of science along with elements of the psychology of scientific observations all targeting the complete understanding of how science actually functions. Prerequisite: Admission to grad school.

**CIED6343 Advanced Science Teaching Methods (Irregular)** This course is designed for those educators who have had some previous instruction in science teaching methods and/or had some prior science teaching experience. Students will gain new or renewed perspectives with respect to their personal teaching ability while engaging in discussions and activities designed to assist others in professional growth in science instruction. Prerequisite: Admission to graduate school.

**CIED6403 Emerging Issues in Special Education (Irregular)** A study in the complex issues with which professionals in the field of special education must be familiar and prepared to address.

**CIED641V Special Topics in Special Education (Irregular) (1-6)** Discussion and advanced studies on select topics in special education. Specific focus on recent developments. May be repeated for up to 6 hours of degree credit.

**CIED6433 Legal Aspects of Special Education (Irregular)** A study of litigation and legislation in special education, federal and state laws and court cases, and due process hearings.

**CIED6443 Advanced Research in Curriculum and Instruction (Sp)** This course will provide opportunities for students to acquire the skills, knowledge, and strategies necessary to design and implement a mixed research study. Emphasis is upon developing

research questions, developing a mixed research design, selecting a sample, and utilizing appropriate techniques for analyzing data.

**CIED6503 Effective Teaching: Concepts and Processes (Sp, Su, Fa)** This course is designed to assist students in examining a variety of effective teaching practices and conditions found in classrooms and in acquiring knowledge, concepts, and ideas about ways to effectively influence the interests, learning and development of students. Prerequisite: Admission to the Ph.D. program.

**CIED6603 Multicultural Education (Sp, Su, Fa)** This course is designed to trace, examine, discuss, and promote understanding of issues related to multicultural education, different views of multicultural education, and the impact of multicultural education upon the schooling process. Emphasis is upon schooling experiences of culturally diverse students, language issues, gender issues, and evaluation issues. Prerequisite: Admission to the Ph.D. program.

**CIED660V Workshop (Sp, Su, Fa) (1-18)** May be repeated for up to 18 hours of degree credit.

**CIED674V Internship (Sp, Su, Fa) (1-6)** May be repeated for up to 6 hours of degree credit.

**CIED6803 Teaching Students with Autism Spectrum Disorders (Sp)** This course provide students with an understanding of individuals who have been diagnosed with autism spectrum disorders. The course provides a life-span perspective by focusing on preschoolers, school-aged children, and adults. Students will study the characteristics of these individuals and general educational strategies for their education.

**CIED680V Ed.S. Project (Sp, Su, Fa) (1-6)**

**CIED6813 Assessment of Students with Autism Spectrum Disorders (Fa)** This course provides an in-depth study of the assessment of individuals with autism spectrum disorders. It includes formal and informal assessment measures used to assist in the identification of students with ASD, as well as provide information for program development for this group of students.

**CIED6823 Instructional Methods for Students with Autism Spectrum Disorders (Sp)** This course is designed to assist professional educators in planning and implementing instructional and support services for students with autism spectrum disorders. Students will learn how to participate in collaborative family, school, and community partnerships.

**CIED6833 Practicum in Autism Spectrum Disorders (Sp, Su, Fa)** Supervised field experiences in programs, schools, and other settings for children with autism spectrum disorders.

**CIED694V Special Topics (Sp, Su, Fa) (1-6)** Discussion and advanced studies on selected topics in curriculum and instruction. Specific focus on recent developments. May be repeated for up to 6 hours of degree credit.

**CIED695V Independent Study (Sp, Su, Fa) (1-6)**

**CIED699V Doctoral Seminar (Sp, Su, Fa) (1-3)** May be repeated for up to 3 hours of degree credit.

**CIED700V Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Candidacy

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### Classical Studies (CLST)

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**CLST1003 Introduction to Classical Studies: Greece (Odd years, Fa)** An introduction to the world of Ancient Greece, from the Trojan War to Alexander the Great. Progresses chronologically, focusing on the literary, artistic, political, and philosophical ideas of the Greeks. Who were they and how are we like them? This course fulfills the second semester world literature requirement.

**CLST1003H Honors Introduction to Classical Studies: Greece (Odd years, Fa)**

**CLST1013 Introduction to Classical Studies: Rome (Even years, Sp)** A multi-faceted introduction to Roman culture, focusing on the literature, philosophy, architecture, history, art and archeology. Source material to be read in English. Lectures liberally illustrated with slides. This course fulfills the second semester world literature requirement.

**CLST1013H Honors Introduction to Classical Studies: Rome (Even years, Sp)**

**CLST399VH Honors Course (Irregular) (1-6)** Prerequisite: Junior standing. May be repeated for up to 12 hours of degree credit.

**CLST4003H Honors Classical Studies Colloquium (Sp)** Prerequisite: Junior standing. May be repeated for up to 3 hours of degree credit.

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### Criminal Justice (CMJS)

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**CMJS2003 Introduction to Criminal Justice (Sp, Fa)** Survey of the field of criminal justice, with an emphasis upon law enforcement, the courts, and corrections.

**CMJS2053 Critical Thinking and Writing in Criminal Justice (Sp, Fa)** An introduction to methods of critical thinking and writing in criminal justice. Prerequisite: CMJS 2003; open to majors only.

**CMJS3003 Criminal Law and Society (Sp, Fa)** Principles

and problems of criminal law in contemporary society. Prerequisite: CMJS 2003.

**CMJS3023 Criminology (Sp, Su, Fa)** A survey of theories of crime causation, development of law, corrections, victimization, and police and policy. Prerequisite: SOCI 2013 or SOCI 2033. (Same as SOCI 3023)

**CMJS3043 The Police and Society (Sp, Fa)** Origins, development, and practice of policing, with an emphasis on police organization, problems, and issues in contemporary society. Prerequisite: CMJS 2003.

**CMJS3203 Corrections (Fa)** A study of the origins, development, and practices related to corrections, including incarceration, community corrections and supervision, and intermediate sanctions. Prerequisite: CMJS 2003. (Same as SOCI 3203)

**CMJS3503 Criminal Procedures (Fa)** Legal principles of police work, including arrests, force, interviewing, search and seizure. Prerequisite: CMJS 2003.

**CMJS3523 Criminal Investigation (Sp)** Survey of the theories, concepts, and legal conditions concerning the techniques used in the location, preservation and presentation of evidence. Prerequisite: CMJS 2003.

**CMJS399VH Honors Course (Sp, Fa) (1-6)** May be repeated for up to 12 hours of degree credit.

**CMJS4003 Internship in Criminal Justice (Sp, Su)** Supervised experience in municipal, county or state criminal justice agency, or any other agency which is approved by instructor. Prerequisite: CMJS 2003.

**CMJS4013 Special Topics in Criminal Justice (Sp, Fa)** Comprehensive study of varied subjects in contemporary criminal justice. May be repeated for different topics. Prerequisite: CMJS 2003 or SOCI 2013. May be repeated for up to 9 hours of degree credit.

**CMJS403V Individual Study in Criminal Justice (Sp, Su, Fa) (1-6)** A reading and conference course on special topics in criminal justice.

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### Counselor Education (CNED)

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**CNED1002 Life Skills Development (Fa)** Study and practice of problem solving, decision making, goals and values clarification and other developmental skills affecting personal issues and academic success. Prerequisite: Instructor consent required.

**CNED1011 Seminar (Sp, Fa)** Single topic seminar focusing on further knowledge acquisition and training in specific developmental skills. Topics offered as needed. Prerequisite: Instructor consent required. May be repeated for up to 3 hours of degree credit.

**CNED3053 The Helping Relationship (Sp, Fa)** Development of an understanding of the helping relationship. Topics include establishing a working alliance, problem recognition and referral to appropriate resources. Prerequisite: PSYC 2003.

**CNED4003 Classroom Human Relations Skills (Sp, Fa)** A study of interpersonal skills important to improving teacher-student relationships and achievement in classrooms. Human communication systems related to motivation, achievement, and educator-student relationships are studied. The attainment of effective human relations skills is emphasized. Prerequisite: Junior or Senior standing required.

**CNED5193 Clinical Mental Health Counseling (Sp)** An introductory study of community counseling. The course content includes information concerning the educational, historical, philosophical, and psychological foundations of community counseling as well as specific traits and skills of professional community counselors. In addition, the course is designed to provide introductory level concepts and skills required for future certification and licensure as counseling professionals. Prerequisite: Graduate student status.

**CNED5203 Foundations of the Counseling Profession (Su, Fa)** A study of the counseling profession applicable to school, college and community agency settings. Introduction to the basic educational, historical, philosophical foundations of counseling as well as specific traits and skills of counselors. The course is also designed to provide beginning level concepts and skills required for certification and licensure. Prerequisite: Must be taken first year in program.

**CNED5213 Lifestyle & Career Development (Su)** Theories of career development and counseling, including the use of occupational information sources and career assessment tools and techniques. Prerequisite: CNED 5333 (preferred)

**CNED5303 Individual Appraisal (Fa)** Analysis of concepts, methods, and procedures utilized in individual appraisal.

**CNED5313 Program Organization and Information Management (Fa)** Study of client information needs and strategies for effective management of counseling services.

**CNED5323 Counseling Theory (Su, Fa)** Introductory survey and critical analysis of major alternative theoretical perspectives in counseling.

**CNED5333 Basic Counseling Techniques (Fa, Sp)** Introduction to basic counseling techniques and skills common to multiple theoretical perspectives. Prerequisite: CNED masters student or

instructor Permission.

**CNED5343 Counseling Practicum (Sp, Fa)** Supervised counseling practice. Pre or Co requisite: CENED 5303 and CNED 5363 and CNED 5373. Prerequisite: CNED 5203, CNED 5323, CNED 5333, CNED 5403. CNED faculty consent required.

**CNED5353 Psychopharmacology (Su)** Study of theory, research, & practice issues pertaining to psychopharmacology for non-medical practitioners. Prerequisite: CNED 5203, CNED 5323, CNED 5333.

**CNED5363 Dynamics of Group Counseling (Sp, Fa)** Therapeutic and other theoretical information is presented regarding group process and the counselor's role in that process. An experiential group experience is required. Prerequisite: CNED 5333 and CNED 5323.

**CNED5373 Ethical and Legal Issues in Counseling (Fa)** (Formerly CNED 5372) Review of ethical and legal standards governing professional counselor training, research, and counseling practice; including client rights; confidentiality; the client-counselor relationship; and counseling research, training, and supervision. Prerequisite: CNED 5103 and CNED 5203.

**CNED5383 Crisis Intervention Counseling (Su)** (Formerly CNED 5382) Analysis and application of short-term counseling intervention strategies in crisis situations, with special attention to incidents involving rape, physical, or emotional abuse, divorce, suicidal depression, grief, marital or family instability, and violent conflict. Prerequisite: CNED 5333 (preferred).

**CNED5403 Case Management and Counseling (Fa)** Procedures in case management utilizing both clinical and interview data in assisting children, adolescents, and adults in educational, vocational, personal, and social planning. Prerequisite: CNED 5303 and CNED 5323 and CNED 5333.

**CNED5513 Counseling and Human Diversity (Su)** Examination of human and cultural diversity, emphasizing issues of race, class, and socioeconomic status, and how they impact our clients as individuals and as family and society members.

**CNED574V Counseling Internship (Sp, Fa) (1-3)** A 600-clock-hour field placement in an approved setting over a minimum of two continuous semesters. Co or Prerequisite CNED 5213.

Prerequisite: CNED 5203, CNED 5303, CNED 5323, CNED 5333, CNED 5343, CNED 5363, CNED 5373, CNED 5403, CNED 5513 and CNED 6203. CNED Faculty consent required. May be repeated for up to 6 hours of degree credit.

**CNED599V Seminar (Irregular) (1-6)** May be repeated for up to 6 hours of degree credit.

**CNED6003 Counseling and Addictions (Su)** A study of behavioral and substance additions, including an overview of differential treatment. Prerequisite: CNED 5323 and CNED 5333 and CNED doctoral or masters standing or permission.

**CNED600V Master's Thesis (Sp, Su, Fa) (1-6)**

**CNED6013 Advanced Counseling Theory and Methods (Even years, Sp)** Critical analysis of major theoretical perspectives in counseling, including both group and individual counseling strategies for dealing with affective, cognitive, and behavioral dysfunction. Prerequisite: CNED doctoral standing or permission.

**CNED6023 Foundations of Marriage and Family Counseling Theory (Su)** Comprehensive exploration of the current theories/techniques of marriage, family and couples counseling. Prerequisite: CNED 5323 and CNED 5333 and CNED doctoral or masters standing or permission.

**CNED6033 Advanced Group Theory and Methods (Odd years, Sp)** Comparative study of theories and processes of group counseling. Includes supervised experience in group facilitation with video recording and playback. Prerequisite: CNED 5363 or equivalent and CNED doctoral or masters standing or permission.

**CNED6043 Supervision of Counselors (Even years, Fa)** Analysis, assessment, and practical application of counselor supervision techniques in treatment and training programs. Prerequisite: CNED doctoral standing and CNED faculty consent

**CNED605V Independent Study (Sp, Su, Fa) (1-18)** May be repeated for up to 18 hours of degree credit.

**CNED6063 Counseling and Sexuality (Even years, Fa)** Analysis of theory and practice in issues related to sexual dysphoria, sexuality, and sexual problems. Prerequisite: CNED 574 and CNED doctoral standing or permission.

**CNED6073 Research in Counseling (Odd years, Sp)** Review and analysis of research in counseling. Prerequisite: CNED doctoral standing or permission.

**CNED6083 Consultation Theory and Methods (Su)** Strategies, practical application, and techniques for effective consultation with parents, teachers, and community agencies. Prerequisite: CNED 5333 (preferred) CNED doctoral or masters standing or permission.

**CNED6093 Counseling Children and Adolescents (Sp)** Introduction to counseling children and adolescents including the process, theories, techniques, and materials applicable to children and adolescents in a pluralistic society. Prerequisite: CNED 5323 and CNED 5333 and CNED doctoral or masters standing or permission.

**CNED6123 Clinical Applications of Marriage and Family Counseling and Therapy (Odd years, Fa)** Advanced clinical methodology appropriate for family counseling, marriage counseling, and couples counseling (in all settings), with emphasis on solution-focused systems, Satir model and psychoeducational family work in schools. Includes supervision of clinical experience in marriage, family and couples counseling, video recording and school/community outreach. Prerequisite: CNED 6203 and CNED doctoral standing or permission.

**CNED6413 Advanced Individual Appraisal (Odd years, Fa)** To provide advanced knowledge and experience with those psychoeducational instruments and procedures used in conducting school related assessment. Prerequisite: CNED 5303 and CNED 5413 or equivalent and CNED doctoral standing or permission.

**CNED6523 Gender Issues in Counseling and Human Development (Even years, Sp)** A study of gender and sex role issues pertinent to the counseling profession, and their effect on the development of children, adults, and young and older adults. Students utilize Gender Fair Guidelines for counseling as presented by the American Counseling Association. Prerequisite: CNED 5203 and CNED doctoral standing or permission.

**CNED6711 Advanced Counseling Practicum (Sp)** Supervised counseling practice. A 100-clock hour approved practical counseling experience. Prerequisite: CNED doctoral standing. Permission of CNED faculty and Clinical Coordinator. May be repeated for up to 3 hours of degree credit.

**CNED674V Internship (Sp, Su, Fa) (1-18)** Supervised field placement (Clinical/Instructorship/Supervision/Research). Prerequisite: CNED doctoral standing, CNED faculty consent and CNED Clinical Coordinator consent. May be repeated for up to 18 hours of degree credit.

**CNED699V Seminar (Su) (1-18)** Prerequisite: CNED Doctoral standing or permission. May be repeated for up to 18 hours of degree credit.

**CNED700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Candidacy and consent.

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### Communication (COMM)

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**COMM1003 Basic Course in the Arts: Film Lecture (Sp, Su, Fa)** Introduction to film as entertainment and art. How to look at film through a study of composition, lighting, editing, sound and acting. Lectures and viewing time.

**COMM1003H Honors Basic Course in the Arts: Film Lecture (Sp, Su, Fa)** Introduction of film as entertainment and art. How to look at a film through a study of composition, lighting, editing, sound and acting. Lectures and viewing time.

**COMM1313 Fundamentals of Communication (Sp, Su, Fa)** Interpersonal and public communication with emphasis in developing both listening and speaking skills.

**COMM1313H Honors Fundamentals of Communication (Sp, Su, Fa)** Interpersonal and public communication with emphasis in developing both listening and speaking skills.

**COMM2303 Public Speaking (Sp, Su, Fa)** Continuing study of the invention and adaptation or oral discourse to the needs of listeners. Consideration of the problems of communication in platform presentation. Prerequisite: COMM 1313.

**COMM2323 Interpersonal Communication (Sp, Su, Fa)** Personal and interpersonal factors affecting communication in everyday life. Emphasis upon ways in which interpersonal perception, physical environment, semantic choices, and nonverbal cues affect communication primarily in the context of work, family, and other personal experiences.

**COMM2333 Introduction to Communication Research (Sp, Fa)** Introduction to the basic assumptions underlying communication inquiry; resources for and methods of data collection in communication research; and techniques for organization, interpretation, reporting, and evaluation of communication research.

**COMM2351 Parliamentary Procedure (Irregular)** Study and practice of the rules and procedures by which self-governing organizations transact business. Prerequisite: Sophomore standing.

**COMM2373 Introduction to Debate (Fa)** An introduction to the basic principles and procedures of debate as an instrument of critical choice and decision.

**COMM2382 Intercollegiate Forensics (Irregular)** Preparation and participation in public debates and other forensic activities. No more than 6 hours of credit in COMM 2382 and 3282 may be applied toward the departmental requirement. (A maximum of 12 hours in COMM 2382 and 3282 hours of credit.) May be repeated for up to 6 hours of degree credit.

**COMM2813 Introduction to Electronic Media (Fa)** Introduction to the industries centered around electronic media, including radio, broadcast and cable television, telephony, computer information systems, and digital media. Emphasis on the historical development, organizational patterns, and cultural functions of the media.

**COMM298V Topics in Communication (Irregular) (1-3)**

Topics in communication not represented in other lower division courses.

**COMM3143 Language and Expressive Culture** This course explores the complex interrelationship of language, culture, and social identity. Verbal art and expressive culture are examined from a variety of anthropological perspectives. Topics include ethnographies of speaking, discourse analysis, cultural performances, and the performative aspects of oral expression. (Same as ANTH 3143, ENGL 3143)

**COMM3173 Introduction to Linguistics (Irregular)** Introduction to language study with stress upon modern linguistic theory and analysis. Data drawn from various languages reveal linguistic universals as well as phonological, syntactic, and semantic systems of individual languages. Related topics: language history, dialectology, language and its relation to culture and society, and the history of linguistic scholarship. Prerequisite: Junior standing. (Same as ANTH 3173, ENGL 3173, WLLC 3173)

**COMM3282 Advanced Forensics (Irregular)** A continuation of 2382. No more than 6 hours of credit in COMM 2382 and 3282 may be applied to the departmental requirement. (A maximum of 12 hours in COMM 2382 and 3282 may be counted toward the B.A. requirements.) May be repeated for up to 6 hours of degree credit.

**COMM3303 Small-Group Communication (Sp, Su, Fa)** Procedures used in exchanging information, solving problems, determining policies, and resolving differences in committees and other small groups. Prerequisite: COMM 1313 and junior standing.

**COMM3333 Communication Criticism (Irregular)** Basic elements and theoretical perspectives on criticism of public communication. Extensive practice in written analysis of events in public address, film, television, and other mass media.

**COMM3343 Contemporary Communication Theory (Sp)** Study of the nature of the communication process as it is reflected in the individual, in interpersonal settings, in one-to-many situations, and in the mass media.

**COMM3353 Argumentation: Reason in Communication (Fa)** Concepts characterizing rational discourse, with a concern for examining validity and fallacy. Consider traditional and contemporary models for analyzing argument, including an examination of the philosophy of argument and a practical inquiry into the uses of argument in contemporary rhetorical discourse.

**COMM3363 Nonverbal Communication (Sp)** Creates an understanding of the functions of nonverbal cues operating in human communication processes and develops familiarity with recent research in the field of nonverbal communication.

**COMM3383 Persuasion (Fa)** Introduction to theories of persuasion with emphasis on application and effect.

**COMM3423 Science Fiction Film (Irregular)** This class concentrates on how science fiction in various communication media influences and is, in turn, influenced by broad features of cultural life. The class considers the impact of science fiction on science fact, the military, space travel, religion, race, gender, social class, education, politics, technology, and fashion styles.

**COMM3433 Family Communication (Irregular)** Study of the nature, functions, and management of communication patterns in the family. Focus is on understanding routine interpersonal interactions, conflict patterns, authority structures, and decision-making processes within the context of the contemporary family.

**COMM3443 Introduction to Rhetorical Theory (Sp, Fa)** Interpretive-critical study of rhetoric in public contexts. Prerequisite: COMM 1313.

**COMM3503 Popular Communication and Culture (Even years, Sp)** This course is an introduction to basic theories and topics of Popular Communication and Culture studies. The course will emphasize understanding popular media communication forms.

**COMM3673 Mediated Communication (Sp, Fa)** Focuses on media messages and their social/cultural effects. Includes a critical examination of media institutions and the ways they vie for audiences. Other topics include the ways people construct meaning from messages, media's influence on attitudes, media's role in cultural life, and audiences as critical consumers of media.

**COMM3703 Organizational Communication (Sp, Fa)** An introduction to the theory, processes, and management of communication in organizations, with opportunities for simulated application.

**COMM3883 Rhetoric of Social Movements (Fa)** Study of the functions of rhetoric as it appears in the context of social movements such as American independence, women's equality, civil rights, populism, and new conservatism.

**COMM3923H Honors Colloquium (Sp, Su, Fa)** Treats a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in communication).

**COMM3983 Special Topics (Sp, Su, Fa)** Communication topics which are not usually presented in depth in regular courses.

**COMM399VH Honors Course (Sp, Su, Fa) (1-6)** Prerequisite: Junior standing. May be repeated for up to 12 hours of degree credit.

**COMM4113 Legal Communication (Fa)** Examines communication processes in the legal environment and focuses on communication skills and behaviors among judges, attorneys, litigants, and jurors. Particular attention will be given to verbal strategies and nonverbal messages related to interviews, negotiation, mediation, and litigation and to the rhetorical functions of legal pleadings and judicial opinions.

**COMM4143 American Film Survey (Fa)** A survey of major American film genres, major directors and films that have influenced the development of motion pictures. (Same as ENGL 4143)

**COMM4283 Communication in Contemporary Society (Fa)** An examination of research and theory on the process and effects of communication in modern society.

**COMM4313 Language and Society of Japan (Fa)** The primary objective of this course is to investigate the way the Japanese language reflects the beliefs and customs of the Japanese people as a social group. For comparison purposes, this course makes reference to studies in American language and culture. Proficiency in Japanese not required. Prerequisite: Junior standing.

**COMM4323 Communication and Conflict (Fa)** Study of the processes, effects, and managements of communicative conflict, including a consideration of conflict styles, power, goals, tactics, assessment, self-intervention and third-party intervention. Prerequisite: COMM 1313 and junior standing.

**COMM4333 Communication and Gender (Sp)** Study of the nature, construction, functions, and effects of gender and gender-role stereotypes related to verbal and nonverbal communication, small-group and organizational interaction, and mass mediated images in contemporary culture.

**COMM4343 Intercultural Communication (Fa)** Study of intercultural communication skills, intercultural issues and their impact at home and abroad, and cross-cultural comparisons of communication phenomena from a variety of theoretical perspectives.

**COMM4353 American Public Address (Irregular)** Historical and critical study of the leading American speakers, their speeches, the issues with which they were identified. Lectures, discussion, reports, and critical papers. Prerequisite: Junior standing.

**COMM4373 Political Communication (Even years, Sp)** Study of the nature and function of the communication process as it operates in the political environment. (Same as PLSC 4373)

**COMM4383 Rhetoric of the Modern American Presidency (Irregular)** A study of the increasing reliance of contemporary presidents on public persuasion through rhetorical discourse.

**COMM4393 Freedom of Speech: Cases & Issues (Fa)** Study of philosophy, cases, and issues relevant to the first amendment right to the free expression, with focus on issues relevant to internal security, obscenity, pornography, slander, and the regulation of communication.

**COMM4413 Communication, Negotiation, Mediation and Conflict (Irregular)** Examines Alternative Dispute Resolution (ADR) research and techniques focusing primarily on negotiation and mediation. Supplements and extends material presented in COMM 4323 (Communication and Conflict). Explores the verbal and nonverbal messages occurring during negotiation and mediation situations in business, legal, and counseling environments. Prepares students for roles involving negotiation and mediation.

**COMM4623 Relational Communication (Sp)** Review of the major theories and concepts in a relational approach to interpersonal communication. Provides exposure to a sampling of the research findings in relational communication.

**COMM4633 History and Development of International Film (Irregular)** A critical survey of international film as a distinctive art form and as a medium of expression and communication with attention given to films and cinema from its origins to the present.

**COMM4643 Environmental Communication (Irregular)** Explores how communication is used by individuals, corporations, and governments to shape public debates about environmental issues. Topics include rhetorical strategies, the public's right to information and input, dispute resolution techniques, advocacy campaigns, and green marketing.

**COMM4683 Documentary Film (Fa)** A study and analysis of the documentary film as a discrete film form and as an important contribution to the international cinematic scene. Prerequisite: Advanced standing.

**COMM4793 Directing Forensics (Irregular)** Planning, directing, and coaching co-curricular forensics at the high school or college or both.

**COMM4823 Children and Media (Sp)** An in-depth examination of children's use of media and the effects of media content on child and adolescent development. Topics may include violence and sex in media, commercialism, and new media.

**COMM4843 Computer-Mediated Communication (Fa)** Provides an in depth consideration of the nature of computer-mediated communication by examining its use and effects in interpersonal, work, educational, and societal contexts and in an introduction to the technologies and skills required for navigating the Internet. The course focuses on the social aspects of computer-mediated communication, rather than specific software or hardware technologies.

**COMM4853 Telecommunication Policy (Irregular)** Research and discussion of social, ethical, education, cultural, and technological aspects of telecommunications with attention given to changing programming patterns, world systems of broadcasting, data transmission, emerging technology, international politics, and regulatory policies. Prerequisite: Junior or senior or graduate standing.

**COMM4863 Seminar in Media (Irregular)** Research/discussion of contemporary issues in media. Emphasis on the economic and social impact of advertising, news, censorship, programs directed toward children, portrayals of women and minorities, future trends in media technologies, and analysis of the changing media landscape.

**COMM4883 Television and American Culture (Fa)** Historical and critical study of how television shapes American culture and is shaped by it. Attention will be given to the study of television history, programs and audiences; particularly how race and gender shape content and reception of programming. Prerequisite: COMM 2333.

**COMM490V Special Problems (Sp, Fa) (1-6)** Credit arranged. Prerequisite: Advanced standing. May be repeated for up to 6 hours of degree credit.

**COMM4913 Internship in Communication (Sp, Su, Fa)** Internship in applied communication within public and private organizations. Prerequisite: Junior standing and completion of 18 hours in communication courses. May be repeated for up to 6 hours of degree credit.

**COMM5111 Colloquium in Communication Research (Sp, Fa)** Presentation, evaluation, and discussion of research proposals or on-going research projects. Graduate students are required to register for this course each semester of residence.

**COMM5113 Historical and Legal Methods in Communication (Fa)** Emphasizes the assumptions and procedures of historical and legal research methods in communication. May be repeated for up to 3 hours of degree credit.

**COMM5123 Quantitative Research Methods in Communication (Fa)** Emphasizes the assumptions and procedures of social scientific research methods in communication.

**COMM5133 Media Processes & Effects (Fa)** Introduction to scholarly research and theory in media processes and effects. Particular attention will be devoted to the impact of media messages on individuals and societies. Emphasis will be placed on the construction and development of theory.

**COMM5143 Ethnographic Methods in Communication (Fa)** This class focuses upon the fieldwork procedures and narrative writing strategies that comprise the methods of ethnographic research in communication. Students conduct fieldwork requiring in-depth interpersonal contact with members of a group or culture, and practice narrative writing skills.

**COMM5193 Seminar in Communication (Sp, Su, Fa)** Research, discussion, and papers focus on one of a variety of communication topics including symbolic processes in communication, philosophy of rhetoric, communication education, criticism of contemporary communication, interpersonal communication, organizational communication, and contemporary applications of rhetoric. Maximum credit is 9 semester hours. Prerequisite: Graduate standing. May be repeated for up to 3 hours of degree credit.

**COMM5323 Seminar in Persuasion (Fa)** Focus is on comparing theoretical accounts of persuasion and research evidence concerning the effects of various factors on persuasion.

**COMM5333 Communication Theory (Fa)** Survey of the theoretical orientations in communication theory with primary focus on conceptual, theoretical, and philosophical issues.

**COMM5343 Interpersonal Communication (Fa)** Theory and research concerning the exchange of information and the mutual influencing of behavior among people. Prerequisite: Graduate standing.

**COMM5353 Rhetorical Criticism (Sp)** A seminar in rhetorical criticism. A study of the development of standards of rhetorical appraisal from the foundations of the art of speaking to the modern period; examination of contemporary approaches to rhetorical appraisal and practice in critical analysis of contemporary address.

**COMM5363 Seminar in Small Group Communication (Su)** A consideration of recent developments in small group research which relate to problem solving tasks, leadership and other kinds of human interaction through speech communication. Emphasis given to the interpersonal speech transaction and to the emergence of participant roles. Prerequisite: COMM 3303 or SOCI 4193.

**COMM5373 Content Analysis (Irregular)** Techniques for observing and analyzing the overt communication behavior of selected communicators. Prerequisite: Graduate standing.

**COMM5383 Seminar in Political Communication (Irregular)** Research seminar focusing on selected topics such as candidate imagery, diffusion of political information, or political symbolism. Prerequisite: Graduate standing. (Same as PLSC 5383)

**COMM5393 Seminar in Contemporary Rhetoric (Irregular)** Systematic study of contemporary perspectives on rhetoric including scholars such as Burke, Richards, Weaver, Grassi, MacIntyre, Derida, and Rorty. Prerequisite: Graduate standing.

**COMM5403 Organizational Communication Theory (Sp)**

A seminar on the historical development of theory and research into communication processes occurring within an organizational setting. Lecture, discussion, oral and written reports. Prerequisite: Graduate standing.

**COMM5413 Organizational Communication Research (Su)**

A seminar on conducting applied research within an organizational setting. Prerequisite: COMM 5403 and graduate standing.

**COMM5423 Seminar in Mass Media Cognition (Even years, Sp)**

Seminar exploring how people learn from written, aural and visual mass media messages. Topics to include attention, memory, comprehension, emotional response, arousal, unconscious processing, picture perception and person perception. Seminar will be concerned with most popular media (e.g., television radio, newspaper, and film), and with several content genres (e.g., entertainment, news, advertising).

**COMM5433 Marital Communication (Even years, Sp)**

An exploration of the major theories and lines of research that examine marital communication in contemporary American life.

**COMM5443 Issues of Race and Gender in Interpersonal Communication (Odd years, Sp)**

An exploration of the major theories and lines of research that examine how race and gender influence interpersonal communication in everyday life in America.

**COMM5453 Myth and Communication Criticism (Irregular)**

Seminar in major theories of mythology, including archetypal and ideological perspectives, and their applications to the criticism of public communicative events. Practice in written critical analysis. Prerequisite: Graduate standing.

**COMM5503 Communication and Cultural Studies (Fa)**

Examinations of the role of communication in modern culture. Emphasis is upon the production and circulation of meanings with society, and special attention is given to the role of popular and mass media in this process. Prerequisite: Graduate standing.

**COMM5533 Family Communication (Even years, Fa)**

An exploration of the major theories and lines of research that examine family communication in contemporary American life.

**COMM569V Seminar in Film Studies (Irregular) (1-3)**

Research, discussion; papers on a variety of film genres and areas including the new American film, the science-fiction film, directors, film comedy, the experimental film, criticism, and the film musical. (Same as ENGL 569V)

**COMM590V Special Problems (Sp, Su, Fa) (1-6)** Credit by arrangement. Prerequisite: Graduate standing.**COMM5913 Internship in Communication (Sp, Su, Fa)**

Internship in applied communication within public and private organizations. Prerequisite: 15 hours graduate level communication in residence.

**COMM5993 Readings in Cultural Studies (Irregular)** Classic and current theoretical approaches to cultural studies. Subject matter changes depending on student interest and faculty expertise.**COMM600V Master's Thesis (Sp, Fa) (1-6)** Prerequisite: Graduate standing.

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**Computer Sci/Computer Engr (CSCE)**


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**CSCE1013 Explorations in Computing (Fa)**

An introduction to computers and computing through interactive programming. This course will provide students with the opportunity to explore programming through interactive applications such as robotics, Web applications, and multimedia. Students will learn the basics of programming, i.e., loops, conditionals, and functions, and learn about how computers work by developing their own multimedia programs, controlling their own robots, and/or creating their own interactive Web pages.

**CSCE2004 Programming Foundations I (Sp, Fa)** Introductory programming course for students majoring in computer science or computer engineering. Software development process: problem specification, program design, implementation, testing and documentation. Programming topics: data representation, conditional and iterative statements, functions, arrays and records. Using C++ in a UNIX environment.

**CSCE2004H Honors Programming Foundations I (Sp, Fa)** Introductory programming course for students majoring in computer science or computer engineering. Software development process: problem specification, program design, implementation, testing and documentation. Programming topics: data representation, conditional and iterative statements, functions, arrays and records. Using C++ in a UNIX environment.

**CSCE2014 Programming Foundations II (Sp, Fa)** This course continues developing problem solving techniques by focusing on fundamental data structures and associated algorithms. Topics include: abstract data types, introduction to object-oriented programming, linked lists, stacks, queues, hash tables, binary trees, graphs, recursion, and searching and sorting algorithms. Using C++ in a UNIX environment. Prerequisite: CSCE 2004.

**CSCE2014H Honors Programming Foundations II (Irregular)**

This course continues developing problem solving techniques by focusing on fundamental data structures and associated algorithms. Topics include: abstract data types, introduction to object-oriented programming, linked lists, stacks, queues, hash tables, binary trees, graphs, recursion, and searching and sorting algorithms. Using C++ in a UNIX environment. Prerequisite: CSCE 2004.

**CSCE2114 Digital Design (Fa)** Introduction to the hardware aspects of digital computers, logic gates, flip-flops, reduction, finite state machines, sequential logic design, digital systems, software design tools, hardware description language (VHDL), and implementation technologies. (Same as ELEG 2904)

**CSCE2214 Computer Organization (Fa)** Presents the relationship between computing hardware and software with a focus on the concepts for current computers. CPU design topics are covered including various techniques for microprocessor design and performance evaluation. Prerequisite: CSCE 2114.

**CSCE2813 Introduction to Internet/World Wide Web**

**(Irregular)** Introduction to Internet and World Wide Web tools and resources, including Web browsers, robots and search engines, multimedia authoring systems, electronic publishing systems, virtual reality systems, network compatible CD-ROMs, network telecommunication and security systems, digital watermarking, Web censors, internet authoring and programming languages.

**CSCE3143 Data Structures (Fa)** Applications of the elements of data structures, arrays, linked lists, trees, stacks, and search techniques. Prerequisite: MATH 2103 and CSCE 2013.

**CSCE3143H Honors Data Structures (Irregular)** Applications of the elements of data structures, arrays, linked lists, trees, stacks, and search techniques. Prerequisites: MATH 2103 and CSCE 2013.

**CSCE3193 Programming Paradigms (Fa)** Programming in different paradigms with emphasis on object oriented programming, network programming and functional programming. Survey of programming languages, event driven programming, concurrency, software validation. Prerequisite: CSCE 2014.

**CSCE3313 Algorithms (Sp)** Provides an introduction to formal techniques for analyzing the complexity of algorithms. The course surveys important classes of algorithms used in computer science and engineering. Prerequisite: CSCE 2014 and MATH 2103.

**CSCE3413 Internet Programming (Irregular)** HTML authoring to W3C standards, use of environment and SSI variables, programming concepts with both scripting languages and interpreted and compiled languages, creating web documents, applications, advanced form applications, search/index utilities, and Web databases. Course presumes some introduction to scripting or programming. Prerequisite: CSCE 2813.

**CSCE3513 Software Engineering (Sp)** A modern approach to the current techniques used in software design and development. This course emphasizes the use of modern software development tools, multi-module programming, and team design and engineering. Prerequisite: CSCE 3143.

**CSCE3613 Operating Systems (Sp)** An introduction to operating systems including topics in system structures, process management, storage management, files, distributed systems, and case studies. Prerequisite: CSCE 2213 and CSCE 3143.

**CSCE3943 Unix Programming I (Irregular)** Structure of UNIX file system, use of exec and fork, interprocess communication and record locking. Prerequisite: CSCE 3143.

**CSCE3953 System Synthesis and Modeling (Fa)** This course instructs the students in the use of modern synthesis and modeling languages and approaches for design automation. This course will teach students the use of HDLs and modeling languages for representing and implementing digital computer systems. Prerequisite: CSCE 2124.

**CSCE3963 Perl Programming (Irregular)** In-depth coverage of the methods and techniques of object-oriented design and its applications to database and artificial intelligence. Prerequisite: CSCE 3943.

**CSCE3973 UNIX Programming II (Irregular)** Structure, implementation, and application of minicomputer systems, microcomputer hardware, microprogramming, minicomputer software technology, and design and evaluation of minicomputer systems. Prerequisite: CSCE 3943.

**CSCE4013 Special Topics (Irregular)** Consideration of computer science topics not covered in other courses. May be repeated for up to 3 hours of degree credit.

**CSCE4023H Honors Special Topics (Irregular)** Consideration of current computer engineering honors topics not covered in other courses. Prerequisite: Honors standing.

**CSCE4114 Embedded Systems (Fa)** The architecture, software, and hardware of embedded systems. Involves a mixture of hardware and software for the control of a system (including electrical, electro-mechanical, and electro-chemical systems). They are found in a variety of products including cars, VCRs, HDTVs, cell phones, pacemakers, spacecraft, missile systems, and robots for factory automation. Prerequisite: CSCE 2214.

**CSCE4114H Honors Embedded Systems (Fa)** The architecture, software, and hardware of embedded systems. Involves a mixture of hardware and software for the control of a system (including electrical, electro-mechanical, and electro-chemical systems). They are found in a variety of products including cars, VCRs, HDTVs, cell phones, pacemakers, spacecraft, missile systems, and robots for factory automation. Prerequisite: CSCE 2214.

**CSCE4213 Computer Architecture (Sp)** The architecture of modern scalar and parallel computing systems. Techniques for dynamic instruction scheduling, branch prediction, instruction level parallelism, shared and distributed memory multiprocessor systems, array processors, and memory hierarchies. Prerequisite: CSCE 2214. (Same as ELEG 4983)

**CSCE4213H Honors Computer Architecture (Sp)** The architecture of modern scalar and parallel computing systems. Techniques for dynamic instruction scheduling, branch prediction, instruction level parallelism, shared and distributed memory multiprocessor systems, array processors, and memory hierarchies. Prerequisite: CSCE 2214. (Same as CSCE 4213, ELEG 4983)

**CSCE4233 Low Power Digital Systems (Irregular)** The reduction of power consumption is rapidly becoming one of the key issues in digital system design. Traditionally, digital system design has mainly focused on performance and area trade-offs. This course will provide a thorough introduction to digital design for lower consumption at the circuit, logic, and architectural level. Prerequisite: CSCE 2123.

**CSCE4253 Concurrent Computing (Irregular)** Programming concurrent processes; computer interconnection network topologies; loosely coupled and tightly coupled parallel computer architectures; designing algorithms for concurrency; distributed computer architectures. Prerequisite: senior standing in computer science or engineering.

**CSCE4313 Programming Languages (Irregular)** Comparison of imperative, object-oriented, and functional styles of languages; language extensibility, design of language interpreters, lexical analysis, grammars/parsing, and evaluation strategies. Prerequisite: CSCE 3143.

**CSCE4323 Formal Languages and Computability (Sp)** Finite Automata and regular languages, regular expressions, context-free languages and pushdown automata, nondeterminism, grammars, and Turing machines. Church's thesis, halting problem, and undecidability. Prerequisite: CSCE 3313.

**CSCE4333 Introduction to Integrated Circuit Design (Irregular)** Design and layout of large scale digital integrated circuits using CMOS technology. Topics include MOS devices and basic circuits, integrated circuit layout and fabrication, dynamic logic, circuit design and layout strategies for large scale CMOS circuits, estimation and optimization of logic speed. Prerequisite: ELEG 3933. (Same as ELEG 4233)

**CSCE4353 CPLD/FPGA-Based System Design (Irregular)** Field Programmable Logic devices (FPGAs/CPLDs) have become extremely popular as basic building blocks for digital systems. They offer a general architecture that users can customize by inducing permanent or reversible physical changes. This course will deal with the implementation of logic options using these devices. Prerequisite: CSCE 2123. (Same as ELEG 4963)

**CSCE4353H Honors CPLD/FPGA-Based System Design (Irregular)** Field Programmable Logic devices (FPGAs/CPLDs) have become extremely popular as basic building blocks for digital systems. They offer a general architecture that users can customize by inducing permanent or reversible physical changes. This course will deal with the implementation of logic options using these devices. Prerequisite: CSCE 2123 and Honors standing.

**CSCE4423 Computer Systems Modeling (Irregular)** Basic concepts of problem analysis, model design, and simulation experiments. A simulation will be introduced and used in this course. Prerequisite: INEG 3313 or STAT 3013 and proficiency in a programming language.

**CSCE4523 Database Management Systems (Fa)** Introduction to database management systems, architecture, storage structures, indexing, relational data model, E-R diagrams, query languages, SQL, ODBC, transaction management, integrity, and security. Prerequisite: CSCE 3143.

**CSCE4543 Software Architecture (Irregular)** A study of software architecture through the use of case studies drawn from real systems designed to solve real problems from technical as well as managerial perspectives. Techniques for designing, building, and evaluating software architectures. Prerequisite: CSCE 3313 and CSCE 4513.

**CSCE4561 Capstone I (Sp, Fa)** CSCE students complete a comprehensive software capstone project during their final year of undergraduate studies. The project is done over 2 semesters in phases: concept, formal proposal, implementation, and presentation. The projects include and may require the integration of software and human factors and hardware elements and are developed to software engineering methodologies.



**CSCE4613 Artificial Intelligence (Irregular)** Introduction to intelligent agents, AI languages, search, first order logic, knowledge representation, ontologies, problem solving, natural language processing, machine vision, machine learning, and robotics. Prerequisite: CSCE 3143.

**CSCE4753 Computer Networks (Sp)** This course is an introductory course on computer networks. Using the Internet as a vehicle, this course introduces underlying concepts and principles of modern computer networks, with emphasis on protocols, architectures, and implementation issues. Prerequisite: INEG 3313 or STAT 3013.

**CSCE4813 Computer Graphics (Irregular)** Introduction to the theory and algorithms used in computer graphics systems and applications. Topics include: 2D and 3D geometric models (points, lines, polygons, surfaces), affine transformations (rotation, translation, scaling), viewpoint calculation (clipping, projection), lighting models (light-material interactions, illumination and shadow calculation). Students will implement their own graphics pipeline to demonstrate many of these techniques. Higher level computer graphics applications will be created using OpenGL.

Prerequisite: CSCE 3143.

**CSCE490V Individual Study (Irregular) (1-3)** Individual study directed by faculty in current research topics, state of the art, or advanced methodology in one of the major computer science or computer engineering areas.

**CSCE4912H Honors Thesis (Sp, Fa)** To provide honors students with experience in presenting their research accomplishments to their peers and faculty. Prerequisite: Honors standing. May be repeated for up to 4 hours of degree credit.

**CSCE4914 Advanced Digital Design (Sp)** To master advanced logic design concepts, including the design and testing of synchronous and asynchronous combinational and sequential circuits using state of the art CAD tools. Prerequisite: CSCE 2114 or ELEG 2904. (Same as ELEG 4914)

**CSCE4963 Capstone II (Sp, Fa)** CSCE students complete a comprehensive capstone project during their final year of undergraduate studies. The project is done over 2 semesters in phases: concepts, formal proposal, implementation, and presentation. The projects include and may require the integration of software and human factor, hardware elements and are developed to software engineering methodologies. Prerequisite: CSCE 4561.

**CSCE5003 Advanced Programming Languages (Irregular)** Abstraction, proof of correctness, functional languages, concurrent programming, exception handling, dataflow and object oriented programming, denotational semantics. Prerequisite: Graduate standing.

**CSCE5013 Advanced Special Topics in Computer Science (Irregular)** Consideration of current computer engineering topics not covered in other courses. May be repeated for up to 3 hours of degree credit.

**CSCE5033 Advanced Algorithms (Irregular)** Design of computer algorithms, with primary emphasis on the development of efficient implementation.

**CSCE5043 Advanced Artificial Intelligence (Irregular)** In-depth introduction to AI. Topics include: philosophical foundations, cognition, intelligent agents, AI languages, search, genetic algorithms, first order and modal logic, inference, resolution, knowledge representation, ontologies, problem solving, planning, expert systems, uncertainty, probabilistic reasoning, fuzzy logic, machine learning, natural language processing, machine vision, and robotics. Prerequisite: Graduate standing.

**CSCE5093 Fault-Tolerant System Design (Irregular)** Fault-tolerance is concerned with making or recovering from the effects of faults in a digital system, once they have been detected. On-line fault detection is often required before the fault recovery process. This course will familiarize students with currently available techniques for self-checking and fault-tolerant digital system design.

**CSCE5203 Advanced Database Systems (Irregular)** Topics include: object databases, distributed databases, XML query, data warehouses, network as database systems, peer-peer data sharing architectures, data grids, data mining, logic foundations, semantic databases, spatial and temporal databases, and knowledge bases. Prerequisite: CSCE 5123 and graduate standing.

**CSCE5213 Bioinformatics (Irregular)** Application of algorithmic techniques to the analysis and solution of biological problems. Topics include an introduction to molecular biology and recombinant DNA technology, biological sequence comparison, and phylogenetics, as well as topics of current interest. Prerequisite: Instructor consent. (Same as BENG 5213)

**CSCE5243 Advanced Formal Languages (Irregular)** An advanced continuation of CSCE 4323. Prerequisite: CSCE 4323 and graduate standing.

**CSCE5253L Integrated Circuit Design Laboratory I (Irregular)** Design and layout of large scale digital integrated circuits. Students design, check and simulate digital integrated circuits which will be fabricated, and tested in I.C. Design Laboratory II. Topics include computer aided design, circuit timing, and wire delay.

Prerequisite: CSCE 4333.

**CSCE5263 Computational Complexity (Irregular)** Turing machines, recursion theory and computability, complexity measures, NP-completeness, analysis on NP-complete problems, pseudo-polynomial and approximation. Prerequisite: Graduate standing.

**CSCE5283 Graph and Combinatorial Algorithms (Irregular)** A study of algorithms for graphs and combinatorics with special attention to computer implementation and runtime efficiency. Prerequisites: Graduate standing or instructor consent.

**CSCE5313 Advanced Operating Systems (Irregular)** Concurrent processes and process communication; mutual exclusion and synchronization principles; kernel philosophy; resource allocation and deadlock; and case studies of specific operating systems. Prerequisite: CSCE 4413 or equivalent and graduate standing.

**CSCE5323 Computer Security (Irregular)** Study of a broad selection of contemporary issues in computer security. Topics include access control, security policies, authentication methods, secure system design, and information assurance. Prerequisite: CSCE 4413.

**CSCE5333 Computer Forensics (Irregular)** Various methods for identification, preservation, and extraction of electronic evidence at a computer crime scene. Specific topics include auditing and investigation of network and host intrusions, computer forensics tools, resources for system administrators and information security officers, legal issues related to computer and network forensics. Prerequisite: CSCE 5323.

**CSCE5363L Integrated Circuit Design Laboratory II (Irregular)** Students test the I.C. chips they designed in I.C. Design Laboratory I, and propose design corrections where needed. Topics include bipolar chip design, gate arrays, BiCMOS, memory design, design for testability, and dynamic & domino logic. Prerequisite: CSCE 5253.

**CSCE5613 Telecommunications (Irregular)** Overview of public and private telecommunication systems, traffic engineering, communications systems basics, information technology, electromagnetics, and data transmission. (Same as ELEG 5613)

**CSCE5633 Network Performance Evaluation (Irregular)** A study of performance modeling tools for telecommunication networks, computer networks, and wireless networks. Prerequisite: STAT 3013.

**CSCE5643 Computer Communications Networks (Irregular)** A study of computer communication networks, including the data link layer, routing, flow-control, local area networks, TCP/IP, ATM, B-ISDN, queueing analysis, and recent developments in computer communications.

**CSCE5653 Network Security (Irregular)** This course introduces security and secrecy in a networked environment. It is intended to familiarize students with the elements of secure communication, and how they inter-relate to provide secure networks in public and private settings.

**CSCE5683 Digital Image Processing (Irregular)** Introduction to digital image processing with an emphasis on practical implementation techniques. Applications include: image acquisition and sampling, image enhancement, noise removal, image restoration, image compression, and object detection. Fundamental methods include: point operations, geometric transformations, linear image processing in the spatial and frequency domains, and non-linear image processing techniques. Basic techniques of linear system theory such as convolution and Fourier transforms will be introduced as necessary to support these topics.

**CSCE5723 Client-Server Computing (Irregular)** Advanced Object Oriented methods for designing software systems for network applications. Topics include implementations of distributed object models, remote database connectivity. Server side programming, and reusable components. Prerequisite: CSCE 5743 and graduate standing.

**CSCE581V Master's Project (Sp, Su, Fa) (1-6)** Required course for report option. Prerequisite: Graduate standing.

**CSCE590V Advanced Individual Study (Irregular) (1-3)** Advanced graduate level individual study directed by faculty in current research topics, state of the art, or advanced methodology in one of the major computer science or computer engineering areas.

**CSCE5943 Computer Arithmetic Circuits (Irregular)** Examination of fundamental principles of algorithms for performing arithmetic operations in computers. This course provides sufficient theoretical and practical information to prepare the digital design engineer with an awareness of basic techniques for the realization of arithmetic circuits. Pre- or Corequisite: Graduate standing.

**CSCE5983 Application Specific Integrated Circuit Design (Irregular)** ASIC design is taught with emphasis on industrial preparation. Topics include ASIC technologies, design entry, simulation, and synthesis. Advanced design methods and techniques are studied for cell based and gate array ASICs. Prerequisite: CSCE 4213 or ELEG 4943.

**CSCE610V Master's Thesis (Sp, Fa) (1-6)**

**CSCE620V Post-Master's Research (Sp, Fa) (1-18)**

**CSCE700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** May be repeated for up to 5 hours of degree credit.

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### Crop, Soil & Environmental Sci (CSES)

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**CSES1011 Introduction to Crop, Soil, and Environmental Science (Fa)** An introduction to the CSES department and majors in Environmental Soil and Water Sciences and Crop Management. Emphasis will be placed on issues and opportunities within these disciplines and orienting students to the department and University of Arkansas. Required of all department majors with less than 24 semester credit hours. Recitation 1 hour 20 minutes per week for the first eight weeks of the semester. Prerequisite: Freshman and sophomore standing only.

**CSES1203 Introduction to Plant Sciences (Sp, Fa)** An introduction to basics of agricultural crop plant structure, growth, and production.

**CSES2003 Introduction to Weed Science (Fa)** Fundamental, practical concepts of weed control and weed biology; equipment and techniques used in modern weed control practices; and basic recommendations and systems for specific agronomic and horticultural crops. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: CSES 1203 or CSES 2103 or HORT 2003.

**CSES2012 Introduction to Organic Crop Production (Sp)** An introduction to the principles of organic agriculture and ecology and the regulations defining organic production and certification. Additional topics include crop rotations for pest management and for increasing soil organic matter, feeding the soil and plant nutrition, soil health, and green manuring, corporate agriculture and genetically modified organisms.

**CSES2013 Pest Management (Sp)** Introduction to basic principles of pest management as they relate to vertebrate animals, insects, plant disease and weeds. Selected pests are studied with emphasis on current management approaches and alternative pest control.

**CSES2101L Crop Science Laboratory (Sp)** A series of laboratory experiments designed to reinforce principles of plant growth and development, reproduction, classification, and the utilization of plant products. Emphasis is placed on major crop plant species. Experiments are conducted by individuals or by teams. Laboratory consists of a single, 2-hour period each week. Required for Crop Management majors. Corequisite: CSES 2103.

**CSES2103 Crop Science (Sp)** Principles of crop growth, development, and utilization and how these principles relate to production. Emphasis on major agronomic crop species. Lecture 3 hours per week.

**CSES2201L Soil Science Laboratory (Fa)** Field and laboratory exercises related to the study of the physical, chemical, and biological properties of soils. Laboratory mandatory for all crop management and environmental, soil, and water science majors and optional for others. Laboratory 2 hours per week. Pre- or Corequisite: CSES 2203.

**CSES2203 Soil Science (Fa)** Origin, classification, and physical, chemical, and biological properties of soils. Lecture 3 hours, discussion 1 hour per week. Corequisite: Drill component. Prerequisite: CHEM 1103 or CHEM 1074.

**CSES3023 Crop, Soil, and Environmental Sciences Colloquium (Fa)** A communication-intensive course covering topics in agronomy and environmental, soil, and water science with particular emphasis on spoken communication but also including written communication, group activities, professionalism, ethics, problem solving, and information retrieval. A student-oriented class with collaborative participation. Colloquium workshop: 3 hours per week. Prerequisite: Junior or Senior standing only.

**CSES3113 Forage Management (Even years, Sp)** Forage crops for pasture, hay, and silage with reference to growth and development, production, nutritional quality, and grazing systems. Lecture 3 hours per week. Prerequisite: CSES 1203 or CSES 2103 or HORT 1203.

**CSES3214 Soil Resources and Nutrient Cycles (Odd years, Sp)** Integration of the fundamental concepts of the biological, chemical, and physical properties of soil systems and their roles in managing soil resources. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: CSES 2203.

**CSES3312 Cotton Production (Even years, Fa)** Principles and techniques associated with production of cotton. Recitation 2 hours per week. Prerequisite: CSES 1203 or CSES 2103 or HORT 1203.

**CSES3322 Soybean Production (Odd years, Sp)** An overview of the history and utilization of soybean as well as the physiological and environmental basis for the development of economical soybean production practices. Recitation 2 hours per week. Prerequisite: CSES 1203 or CSES 2103 or HORT 1203.

**CSES3332 Rice Production (Odd years, Fa)** A study of the principles and practices involved in rice culture worldwide with major emphasis on the United States. Recitation 2 hours per week.

Prerequisite: CSES 1203 or CSES 2103 or HORT 1203.

**CSES3342 Cereal Grain Production (Even years, Sp)** An overview of the botany, production, cultural practices, soil & climatic adaptation and utilization of the major cereal grain crops. Prerequisite: CSES 1203 or CSES 2103 or HORT 1203.

**CSES355V Soil Profile Description (Fa) (1-2)** Training for soil profile description writing and membership of judging teams. May be repeated for up to 8 hours of degree credit.

**CSES400V Special Problems (Sp, Su, Fa) (1-6)** Work on special problems in crop, soil and environmental sciences or related field. May be repeated for up to 8 hours of degree credit.

**CSES4013 Advanced Crop Science (Sp)** Fundamental concepts of crop physiology, crop improvement, seed science, and crop production systems. Recitation 3 hours per week. Prerequisite: CSES 2103.

**CSES402V Special Topics (Irregular) (1-3)** Studies of selected topics in crop, soil and environmental sciences not available in other courses. May be repeated for up to 12 hours of degree credit.

**CSES4043 Environmental Impact and Fate of Pesticides (Fa)** Environmental issues associated with pesticide use, including fate of pesticides in the environment, ecological impact of pesticides, and exposure risks to humans. Course recommended for students who have 12 hours of biological and /or physical sciences or consent. Lecture 3 hours per week.

**CSES4103 Plant Breeding (Even years, Fa)** Basic principles involved in plant breeding programs to improve crop plants and seed programs. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: ANSC 3123 or BIOL 2323.

**CSES4133 Weed Identification, Morphology, and Ecology (Fa)** Study of weeds as economic pests occurring in both agricultural and nonagricultural situations and including poisonous plants and other specific weed problems. Gross morphological plant family characteristics which aid identification, habitat of growth and distribution, ecology, competition, and allelopathy are discussed. Lecture 2 hours, laboratory 2 hours a week. Corequisite: Lab component. Prerequisite: CSES 2103 (or HORT 2003).

**CSES4143 Principles of Weed Control (Sp)** Advanced concepts and technology used in modern weed control practices and study of the chemistry and specific activity of herbicides in current usage. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: CHEM 2613 and CHEM 2611L and CSES 2003.

**CSES4224 Soil Fertility (Fa)** Study of the soil's chemical, biological and physical properties, and human modification of these properties, as they influence the uptake and utilization of the essential nutrients by plants. Lecture 3 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: CSES 2201L and CSES 2203.

**CSES4234 Plant Anatomy (Sp)** Advanced training in plant anatomy. Studying the structure, terminology, techniques and function associated with vascular plant anatomy. Corequisite: Lab component. Prerequisite: BIOL 1613/1611 or BIOL 1543/1541L.

**CSES4253 Soil Classification and Genesis (Sp)** Lecture and field evaluation of soil properties and their relation to soil genesis and soil classification with emphasis on soils of Arkansas. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: CSES 2203.

**CSES462V Internship (Sp, Su, Fa) (1-6)** Supervised practical work experience in agronomy and environmental science to develop and demonstrate professional competence. Faculty approval of project proposal prior to enrollment and written and oral reports after the project is complete are required. Prerequisite: junior standing. May be repeated for up to 6 hours of degree credit.

**CSES4803 Precision Agriculture (Odd years, Fa)** Introduction to precision agriculture, benefits, spatial variability within a field, zone concept, site-specific management. Spatial data collection: sensors, GPS, yield monitoring, remote sensing. Knowledge discovery from data: data processing, neural networks, genetic algorithms, use of GIS. Decision support systems. Variable-rate technology: real-time and map-based systems, variable-rate machinery, and smart controls. Evaluation: yield mapping, economic analysis. Corequisite: Lab component. Prerequisite: MATH 1213 and junior standing.

**CSES5001 Weed Science Practicum (Su)** Training for membership on weed team, through participation. Prerequisite: Graduate standing.

**CSES5013 Crop Physiology (Odd years, Fa)** Understanding and quantitative measurement of physiological processes, plant responses, and environmental parameters in relation to the production of crops. Prerequisite: BIOL 4304.

**CSES5023 Weed Physiology and Herbicide Resistance in Plants (Odd years, Fa)** The reproduction, growth, and development of weeds and the ecological factors affecting these processes; development and mechanisms of herbicide resistance, flow of herbicide-resistance genes; and development of herbicide-resistant crops. Corequisite: Lab component. Prerequisite: CSES 4143 and (BIOL 4304 or CHEM 5813).

**CSES502V Special Problems Research (Sp, Su, Fa) (1-6)** Original investigations on assigned problems in agronomy. Prerequisite: Graduate standing.

**CSES5033 Advanced Soil Fertility and Plant Nutrition (Even years, Fa)** Study of water uptake, ion absorption, translocation and metabolism in higher plants. Lecture 3 hours per week. Prerequisite: BIOL 4304 and CHEM 2613 and CHEM 2611L.

**CSES504V Special Topics (Irregular) (1-4)** Topics not covered in other courses or a more intensive study of specific topics in agronomy. Prerequisite: Graduate standing.

**CSES5053 Scientific Writing (Fa)** Open to graduate students, especially those in agricultural and life sciences. The course will cover searching the scientific literature, writing theses, proposals, journal articles, and other scientific documents. Emphasis on style and techniques used in scientific publication. Lecture and workshop 3 hours per week. Prerequisite: Graduate standing.

**CSES5103 Scientific Presentations (Sp)** Experience in procedures required for professional presentations of scientific papers, seminars, posters; and research findings at meetings in conferences, and with discussion groups. Instruction in organization of materials, visual aids, and good speaking habits. Lecture 3 hours per week. Prerequisite: Graduate standing.

**CSES5124 Crop Molecular and Physiological Genetics (Even years, Sp)** Study of genome organization and expression in agronomic and horticultural plants, with emphasis on genes regulating physiological processes. Lecture 3 hours, discussion 1 hour per week. CSES 5013 and CHEM 5813 and CHEM 5843 are recommended but not required. Corequisite: Drill component. Prerequisite: BIOL 4304 and BIOL 2323 and BIOL 2321L (or ANSC 3123).

**CSES5214 Analytical Research Techniques in Agronomy (Even years, Fa)** Preparation and analysis of plant and soil samples utilizing spectrophotometry, isotopes, and chromatographic separation methods. Additionally, measurements are made of photosyntheses, respiration, water relationships, light, and temperatures in whole plants. Lecture 2 hours, laboratory 4 hours per week. Corequisite: Lab component. Prerequisite: BIOL 4304 and CHEM 2613 and CHEM 2611L.

**CSES5224 Soil Physics (Sp)** Physical properties of soils and their relation to other soil properties, growth of plants and transport of water, oxygen, heat, and solutes such as pesticides and plant nutrients. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: CSES 2203 and MATH 1203.

**CSES5233 Plant Genetic Engineering (Odd years, Sp)** Topics will be covered in the field of in vitro plant biology, transgene genetics and crop genetic engineering. Concepts and applications of transgenic plant technology will be discussed, with the emphasis on the strategies for crop improvement and gene discovery. Lecture 3 hours.

**CSES5264 Soil Microbiology (Odd years, Sp)** A study of the microorganisms in soil and the biochemical processes for which they are responsible. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: BIOL 2013 and BIOL 2011L.

**CSES5453 Soil Chemistry (Even years, Sp)** Application of the principles of chemistry to processes of agronomic and environmental importance in soils. Soil clay mineralogy, soil solution thermodynamics, structure and reactivity of humus, surface complexation and ion exchange, electro-chemical phenomena, and colloidal stability. Prerequisite: CSES 2203 and CHEM 1123 and CHEM 1121L.

**CSES5543 Plant Genomics (Odd years, Fa)** Plant genetics based on the study of whole genome sequence, transcriptome and proteome. Provides an overview of the principles and techniques of experimental and in silico genomics. Covers all areas of genome research including structural, comparative and functional genomics as well as proteomics. Prerequisite: CHEM 5843 or any graduate level genetics course.

**CSES600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**CSES6113 Herbicide Behavior (Even years, Fa)** Biochemistry, physiology and behavior of herbicides in plants, soils, and the environment. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: CSES 4143 and BIOL 4304 and CHEM 3813.

**CSES6253 Forage-Ruminant Relations (Odd years, Sp)** Advanced chemical, physical, and botanical characteristics of forage plants, the dynamics of grazing, intake and digestion, and techniques of measuring forage utilization and systems analysis at the plant-animal interface. Lecture 3 hours per week. Prerequisite: ANSC 3143 and CSES 3113. (Same as ANSC 6253)

**CSES700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Graduate standing.

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### Civil Engineering (CVEG)

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**CVEG2051L Surveying Systems Laboratory (Sp, Fa)**

Laboratory exercises demonstrating the principles and practices of

surveying systems. Corequisite: CVEG 2053.

**CVEG2053 Surveying Systems (Sp, Fa)** Coordinate, measuring, and total integrated surveying systems; total stations, electronic data collection, and reduction; error analysis; applications to civil engineering and surveying practice. Corequisite: CVEG 2051L. Prerequisite: MATH 2554.

**CVEG2113 Structural Materials (Sp, Fa)** Production, properties, behavior, and structural applications of concrete, steel, timber, masonry, and plastic. Statistical analysis methods for quality control are also covered. Lecture 2 hours, laboratory 3 hours per week. Pre- or Corequisite: MEEG 3013. Corequisite: Lab component.

**CVEG3022 Public Works Economics (Sp, Fa)** Continues the concepts of engineering design and the engineering approach to the solution of problems. The principles and applications of engineering economy are introduced. Creative thinking is emphasized. Recitation 2 hours per week. Prerequisite: Junior standing.

**CVEG3133 Soil Mechanics (Sp, Fa)** Introduction to geotechnical engineering. Properties of soils related to foundations, retaining walls, earth structures, and highways. Lecture 2 hours, laboratory 3 hours per week. Pre- or Corequisite: CVEG 3213 and MATH 3404. Corequisite: Lab component. Prerequisite: MEEG 3013.

**CVEG3213 Hydraulics (Sp, Fa)** Study of incompressible fluids. Topics include fluid properties, fluid statics, continuity, energy and hydraulic gradients, fundamentals of flow in pipes and open channels. Hardy Cross analyses, measurement of flow of incompressible fluids, hydraulic similitude and dimensional analysis. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: MEEG 2003.

**CVEG3223 Hydrology (Sp, Fa)** Use of ground water and surface water. Flooding routing procedures in storage reservoirs and channels. Hydrologic planning including storage reservoir design, frequency duration analysis, and related techniques. Prerequisite: CVEG 2053 or BENG 2612; and CVEG 3213 or MEEG 3503.

**CVEG3243 Environmental Engineering (Sp, Fa)** Introduction to theories and fundamentals of physical, chemical, and biological processes with emphasis on water supply and wastewater collection, transportation, and treatment. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: MATH 3404 and CHEM 1123.

**CVEG3304 Structural Analysis (Sp, Fa)** Truss analysis, influence lines for beams and frames, and effects of moving loads. Deformation of beams, frames, and trusses. Analysis of indeterminate structures by moment area, slope deflection, and moment distribution methods; approximate methods of analysis. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: MEEG 3013.

**CVEG3413 Transportation Engineering (Fa)** Introduction to highway and transportation engineering, planning, finance, economics, traffic, and geometric design of transportation facilities; theory and application of driver, vehicle and roadway characteristics as they relate to roadway and intersection design; safety, capacity, traffic operations, and environmental effects for highway engineering. Prerequisite: CVEG 2053.

**CVEG4003 CAD & Visualization for Civil Structures (Irregular)** Design process of infrastructures using 3 Dimensional (3D) Computer Aided Design and Engineering visualization with a highway design emphasis. Students produce a digital video for a designed civil structure as a class project. Develop skills in photo matching for placement of designed structures in real environment. Prerequisite: Senior standing.

**CVEG4053 Land Surveying (Irregular)** Historical background of property surveys. Detailed consideration of original surveys and the United States Public Land Surveys. Writing adequate land descriptions. Interpretation of old descriptions. Excess and deficiency. Riparian rights. Field practice in relocation of old corners. Prerequisites: Senior standing and CVEG 2053.

**CVEG4083 Control Surveys (Irregular)** Sun and Polaris observations for astronomic azimuth, solar access studies; control traversing, leveling, triangulation; state plane coordinate systems. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: CVEG 2053 and CVEG 2051L.

**CVEG4143 Foundation Engineering (Sp, Fa)** Analysis and design of retaining walls, footings, sheet piles, and piles. Determination of foundation settlements in sand and clay. Prerequisite: CVEG 3133.

**CVEG4153 Earth Structures (Irregular)** The use of soil as a construction material including compaction, cement, lime, and fly ash stabilization. Special topics include seepage, slope stability, swelling, and collapsible soils. Prerequisite: CVEG 3133.

**CVEG4243 Environmental Engineering Design (Sp, Fa)** Application of physical, biological, and chemical operations and processes to the design of water supply and wastewater treatment systems. Prerequisite: CVEG 3243.

**CVEG4263 Environmental Regulations and Permits (Fa)** Topics include federal and state environmental regulations, the

permitting process, permit requirements and related issues. Prerequisite: CVEG 3243 and senior standing.

**CVEG4303 Reinforced Concrete Design I (Sp, Fa)** Design of reinforced concrete elements with emphasis on ultimate strength design supplemented by working stress design for deflection and crack analysis. Prerequisite: CVEG 2113 and CVEG 3304.

**CVEG4313 Structural Steel Design I (Sp, Fa)** Design of structural steel elements by elastic design the Load and Resistance Factor Design method. Intensive treatment of tension members, beams, columns, and connections. Pre- or Corequisite: CVEG 2113. Prerequisite: CVEG 3304.

**CVEG4323 Design of Structural Systems (Sp)** An overview of the structural design of buildings. Investigates structural design from loading identification through structural analysis and detailing including consideration of fabrication, construction and erection issues. Prerequisites: CVEG 4303 and 4313.

**CVEG4343 Reinforced Masonry Design (Irregular)** Properties of masonry materials and assemblages. Masonry workmanship and quality control. Design of reinforced masonry elements against gravity and lateral loads. Design of masonry connections and joints. Application to 1- and 2-story buildings. Prerequisite: CVEG 4303.

**CVEG4353 Timber Design (Irregular)** Selection of timber beams, columns, and beam-columns. Physical properties of wood, analysis and design of timber connections. Truss design, glulam members, timber bridge design, treatment for decay, and fire protection. Pre- or Corequisite: CVEG 2113. Prerequisite: CVEG 3304.

**CVEG4363 Prestressed Concrete Design (Irregular)** Analysis and design of prestressed concrete flexural sections by working stress and ultimate strength design methods. Flexural behavior, moment-curvature diagrams, draping, anchorage zone design, torsion and shear, deflections, and prestress losses. Design of composite sections and continuous beams. Prerequisite: CVEG 4303.

**CVEG4393 Reinforced Concrete Design II (Irregular)** Shear strength, minimum thickness requirements, and deflection calculations for reinforced concrete structural slabs. Design of one-way and two-way structural slabs by the direct design and equivalent frame methods. Prerequisite: CVEG 4303.

**CVEG4413 Pavement Evaluation and Rehabilitation (Irregular)** Introduction of concepts and procedures for pavement condition surveys; evaluation by nondestructive and destructive testing; maintenance strategies; rehabilitation of pavement systems for highway and airfields; pavement management systems. Prerequisite: CVEG 4433.

**CVEG4423 Geometric Design (Sp)** The geometric design of streets and highways, based on theory and application of driver and vehicle characteristics. Prerequisite: CVEG 3413.

**CVEG4433 Transportation Pavements and Materials (Sp, Fa)** Study of the engineering properties and behavior of materials commonly used in transportation facilities as they relate to the design and performance of flexible and rigid pavement systems. Lecture 2 hours, laboratory 3 hours per week. Prerequisite: CVEG 3133, CVEG 3413, and INEG 3313.

**CVEG4513 Construction Management (Sp, Fa)** Introduction to methods and procedures for management of civil engineering construction projects including organization, plans and specs, cost estimating and bidding, project planning and finance, quality control/assurance, construction safety, cost management, labor issues, change orders, and subcontractor issues. Prerequisite: Senior standing.

**CVEG4803 Structural Loadings (Irregular)** Theoretical background to and practical code requirements for various structural loadings. These include dead loads, occupancy loads, roof loads and ponding, snow loads, granular loads, vehicular loads, wind loading, and seismic loads. Prerequisite: CVEG 3304 and CVEG 4303 (or CVEG 4313).

**CVEG4811 Environmental Design Project (Sp)** Comprehensive engineering design project primarily related to environmental issues. Corequisite: CVEG 4243

**CVEG4821 Geotechnical Design Project (Fa)** Comprehensive engineering design project primarily related to geotechnical issues. Corequisite: CVEG 4143.

**CVEG4831 Structural Design Project (Sp)** Comprehensive engineering design project primarily related to structural issues. Corequisite: CVEG 4323

**CVEG4841 Transportation Design Project (Fa)** Comprehensive engineering design project primarily related to transportation issues. Corequisite: CVEG 4433.

**CVEG4852 Engineering Professional Practice Issues (Sp, Fa)** Study of various issues related to the professional practice of engineering including ethics, professionalism, project procurement, social and political issues, project management, globalism, contract documents and other legal issues. Corequisite: CVEG 4811 or CVEG 4821 or CVEG 4831 or CVEG 4841.

**CVEG488V Special Problems (Irregular) (1-6)** Prerequisite: senior standing. May be repeated for up to 6 hours of degree credit.

**CVEG491VH Honors Studies in Geotechnical Engineering**

**(Irregular) (1-6)** The study of advanced topics in the geotechnical engineering field. May include participation in geotechnical engineering courses normally available only to graduate students. Course may be repeated for up to 6 hours total credit with approval of the CVEG honors advisor. Prerequisite: CVEG 3133.

**CVEG492VH Honors Studies in Environmental Engineering (Irregular) (1-6)** The study of advanced topics in the environmental engineering field. May include participation in environmental engineering courses normally available only to graduate students. Course may be repeated for up to 6 hours total credit with approval of the CVEG honors advisor. Prerequisite: CVEG 3243.

**CVEG493VH Honors Studies in Structural Engineering (Irregular) (1-6)** The study of advanced topics in the structural engineering field. May include participation in structural engineering courses normally available only to graduate students. Course may be repeated for up to 6 hours total credit with approval of the CVEG honors advisor. Prerequisite: CVEG 3304.

**CVEG494VH Honors Studies in Transportation Engineering (Irregular) (1-6)** The study of advanced topics in the transportation engineering field. May include participation in transportation engineering courses normally available only to graduate students. Course may be repeated for up to 6 hours total credit with approval of the CVEG honors advisor. Prerequisite: CVEG 3413.

**CVEG4983H Honors Undergraduate Thesis (Irregular)** Thesis research for civil engineering students enrolled in the honors college. Prerequisite: Honors College.

**CVEG5113 Soil Dynamics (Irregular)** This course covers propagation of stress waves in elastic and inelastic materials, dynamic loading of soils, and stiffness and damping properties of soils. Use of field and laboratory techniques to determine shear wave velocity of soils. Also includes applications of dynamic soil properties in site stiffness characterization, geotechnical earthquake engineering, evaluation of ground improvement, and design of machine foundations. Prerequisite: CVEG 4143.

**CVEG5123 Measurement of Soil Properties (Irregular)** Consideration of basic principles involved in measuring properties of soils. Detailed analysis of standard and specialized soil testing procedures and equipment. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: CVEG 4143.

**CVEG5143 Transportation Soils Engineering (Irregular)** Advanced study of the properties of surficial soils; soil classification systems; pedology; soil occurrence and variability; subgrade evaluation procedures; repeated load behavior of soils; soil compaction and field control; soil stabilization; soil trafficability and subgrade stability for transportation facilities. Prerequisite: CVEG 3133.

**CVEG5163 Seepage and Consolidation (Irregular)** Investigation of the flow of water through soils and the time rate of compression of soils. Characterization of the hydraulic conductivity of soils in the field, seepage through earth dams, excavation cut-off walls, and other seepage control systems. Analytical and experimental investigations of soil volume change under hydraulic and mechanical loading. Design of earth and rock dams, well pumping, and vertical and radial consolidation in embankments. Prerequisite: CVEG 4143.

**CVEG5173 Advanced Foundations (Irregular)** Study of soil-supported structures. Topics include drilled piers, slope stability, pile groups, negative skin friction, foundation design from the standard penetration test and Dutch cone, and other specialized foundation design topics. Prerequisite: CVEG 4143.

**CVEG5183 Geo-Environmental Engineering (Irregular)** Study of the geotechnical aspects of waste containment systems and contaminant remediation applications. Analysis and measurement of flow of water and contaminants through saturated and unsaturated soils, clay mineralogy and soil-chemical compatibility, and mechanical and hydraulic behavior of geomembranes, geotextiles, and geosynthetic clay liners. Design and construction aspects of compacted clay and composite landfill liners, drainage systems, and landfill covers. Prerequisite: CVEG 3133

**CVEG5193 Geotechnical Earthquake Engineering (Irregular)** This course covers stress wave propagation in soil and rock; influence of soil conditions on seismic ground motion characteristics; evaluation of site response using wave propagation techniques; liquefaction of soils; seismic response of earth structures and slopes. Prerequisite: CVEG 4143.

**CVEG5234 Water and Wastewater Analysis (Irregular)** Application of chemistry to environmental engineering. Quantitative determinations of constituents in water and wastewater. Principles of bacteriological laboratory techniques. Lecture 3 hours, laboratory 3 hours per week. Prerequisite: CVEG 3243.

**CVEG5243 Groundwater Hydrology (Irregular)** Detailed analysis of groundwater movement, well hydraulics, groundwater pollution and artificial recharge. Surface and subsurface investigations of groundwater and groundwater management, saline intrusion and groundwater modeling will be addressed. Prerequisite: CVEG 3223.

**CVEG5253 Microbiology for Environmental Engineers**

**(Irregular)** Fundamental and applied aspects of microbiology and biochemistry relating to water quality control, wastewater treatment, and stream pollution. Prerequisite: CVEG 3243.

**CVEG5263 Stream Pollution Analysis (Irregular)** The determination and application of deoxygenation and reaeration rates to stream pollution analysis. A study of biological degradation rates for municipal and industrial wastes. Prerequisite: CVEG 3243.

**CVEG5273 Open Channel Flow (Irregular)** Open Channel Flow includes advanced open channel hydraulics, flow measurement techniques, a hydrology review, culvert and storm drainage facility design, natural channel classification (fluvial geomorphology) and rehabilitation, computer methods and environmental issues. Prerequisite: CVEG 3213 and CVEG 3223.

**CVEG5293 Water Treatment & Distribution System Design (Irregular)** Design of industrial and municipal water treatment plants. Discussion of raw and treated water requirements for the several uses. Distribution system analysis and design including distribution storage and pumping. Prerequisite: CVEG 3243.

**CVEG5313 Matrix Analysis of Structures (Irregular)** Energy and digital computer techniques of structural analysis as applied to conventional forms, space trusses, and frames. Prerequisite: CVEG 3304.

**CVEG5323 Structural Dynamics (Irregular)** Dynamics response of single and multidegree of freedom systems. Modal analysis. Response spectra. Computer programs for dynamic analysis. Design considerations for structures subjected to time-varying forces including earthquake, wind, and blast loads. Prerequisite: CVEG 3304.

**CVEG5343 Highway Bridges (Irregular)** Economics of spans, current design and construction specifications, comparative designs. Possible refinements in design techniques and improved utilization of materials. Prerequisite: CVEG 4313 and CVEG 4303.

**CVEG5373 Advanced Structural Steel Design (Irregular)** Design of structural steel components using the Load and Resistance Factor Design method. Intensive treatment of simple and eccentric connections, composite construction, plate girders, and plastic analysis and design. Prerequisite: CVEG 4313.

**CVEG5383 Finite Element Methods in Civil Engineering (Irregular)** An understanding of the fundamentals of the finite element method and its application to structural configurations too complicated to be analyzed without computer applications. Application to other areas of civil engineering analysis and design such as soil mechanics, foundations, fluid flow, and flow through porous media. Prerequisite: Graduate standing.

**CVEG5403 Advanced Reinforced Concrete II (Irregular)** Design of circular and rectangular reinforced concrete tanks for fluid and granular loads. Prerequisite: CVEG 4303.

**CVEG5413 Transportation and Land Development (Irregular)** Study of interaction between land development and the transportation network. Application of planning, design, and operational techniques to manage land development impacts upon the transportation system, and to integrate land layout with transportation network layout. Prerequisite: Graduate standing.

**CVEG5423 Structural Design of Pavement Systems (Irregular)** An introduction to the structural design of pavement systems including: survey of current design procedures; study of rigid pavement jointing and reinforcement practices; examination of the behavioral characteristics of pavement materials and of rigid and flexible pavement systems; introduction to structural analysis theories and to pavement management concepts. Prerequisite: CVEG 4433.

**CVEG5433 Traffic Engineering (Irregular)** A study of both the underlying theory and the use of traffic control devices (signs, traffic signals, pavement markings), and relationships to improved traffic flow and safety, driver and vehicle characteristics, geometric design, and societal concerns. Also includes methods to collect, analyze, and use traffic data. Prerequisite: CVEG 3413 or graduate standing.

**CVEG5463 Transportation Modeling (Irregular)** The use of mathematical techniques and/or computer software to model significant transportation system attributes. May compare model results with actual measured traffic attributes, using existing data sources and/or collecting and analyzing field data. Prerequisite: Graduate standing.

**CVEG5473 Transportation System Characteristics (Irregular)** Introduction to traffic flow theory, including traffic stream interactions and capacity. Applications for planning, design, operations. Prerequisite: CVEG 3413 and graduate standing.

**CVEG5483 Transportation Management Systems (Irregular)** Six transportation management systems are explored: pavement, bridge, intermodal, public transportation, safety, and congestion. System approaches are presented. Techniques are introduced on how to optimally allocate resources. Pavement and bridge structure basics are discussed and their performance parameters are presented. Case studies are used to illustrate the interfaces among various modes of transportation. Safety and congestion problems in transportation are addressed.

**CVEG562V Research (Sp, Su, Fa) (1-6)** Fundamental and applied research. Prerequisite: Graduate standing.

**CVEG563V Special Problems (Irregular) (1-6)** Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**CVEG5734 Advanced Wastewater Process Design and Analysis (Irregular)** Application of advanced techniques for the analysis of wastewater treatment facilities. Physical, chemical and biological processes for removing suspended solids, organics, nitrogen, and phosphorus. Laboratory treatability studies will be used to develop design relationships. Lecture 3 hours, laboratory 3 hours per week. Prerequisite: CVEG 5234 and CVEG 4243.

**CVEG600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**CVEG700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Candidacy.

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### Dance (DANC)

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**DANC1003 Basic Course in the Arts: Movement and Dance (Sp, Su, Fa)** Introduction to the nature and scope of ballet, modern dance, and ethnic-ritual-world dance forms, their potential for contributing towards multicultural literacy, and to the shaping of an American audience. Comprised of lectures, videos, and movement experiences in the form of Studio Labs.

**DANC1003H Honors Basic Course in the Arts: Movement and Dance (Sp, Su, Fa)** Introduction to the nature and scope of ballet, ethnic, and modern dance forms, their potential for contributing towards multicultural literacy, and to the shaping of an American audience. Comprised of lectures, videos, and movement experiences in the form of studio labs. Prerequisite: honors standing.

**DANC1912 Beginning Modern Dance (Sp, Fa)** Introduction to basic techniques with an emphasis on acquiring flexibility, strength, and coordination.

**DANC1922 Beginning Modern Dance II (Sp, Su, Fa)** A continuation of basic modern dance techniques from DANC 1912, with emphasis on weight, time, and shape in movement. Prerequisite: DANC 1912.

**DANC1932 Beginning Ballet (Sp, Fa)** Introduction to the basic techniques of ballet in the recognized classic form including barre exercises, port de bras, and center practice.

**DANC1942 Beginning Ballet II (Sp, Su, Fa)** A continuation of the basic techniques of classical ballet from DANC 1932. Prerequisite: DANC 1932.

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### Dance Education Activity (DEAC)

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**DEAC1961 Ballroom Dance (Sp)** The fundamentals of ballroom dance.

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### Degree Studies (DGST)

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**DGST600V DEGREE STUDIES (1-18)**

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### Drama (DRAM)

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**DRAM1003 Basic Course in the Arts: Theatre Lecture (Sp, Su, Fa)** Introduction to theatre arts; playwriting, directing, acting, and design. For the general student. May not be presented toward satisfaction of the B.A. in fine arts requirement by drama majors.

**DRAM1003H Honors Basic Course in the Arts: Theatre Lecture (Sp, Su, Fa)**

**DRAM1223 Introduction to Dramatic Art (Sp, Fa)** Introduction to an examination of the various elements that make up dramatic art. Study of the history, literature, theory, and practice of the theatre, from ancient to modern times, from the playwright to the producer.

**DRAM1311L Stage Technology I Laboratory (Fa)** Practical application of costume technology and makeup skills. Students will participate in projects involving the construction and preparation of costumes and makeup designs associated with departmental productions. Production running crew positions will also be assigned. Corequisite: DRAM 1313.

**DRAM1313 Stage Technology I: Costumes and Makeup (Fa)** Fundamentals of basic costume construction with an emphasis on techniques, materials, planning and process. Training in the basic principles of theatrical makeup application. Corequisite: DRAM 1311L.

**DRAM1321L Stage Technology II Laboratory: Scenery and Lighting (Sp)** Practical application of principles of scenery and lighting technology. Students will participate in projects involving the construction and preparation of scenery, stage properties, and lighting associated with departmental productions. Production running crew positions will also be assigned. Corequisite: DRAM 1323.

**DRAM1323 Stage Technology II: Scenery and Lighting (Sp)** Fundamentals of scenery and lighting technology with emphasis on theatre tools, equipment, and basic drafting. Training in basic principles and skills of stage carpentry, lighting technology and

rigging. Corequisite: DRAM 1321L.

**DRAM1683 Acting I (Sp, Su, Fa)** An analytical approach to the actor's art with emphasis on the techniques of characterization.

**DRAM2313 Introduction to Theatrical Design (Fa)** Fundamentals of design for the theatre including costume, lighting, and scenery. Study of the designer's role in the production process, design requirements, and aesthetics. Emphasis on the basic principles of two-dimensional art and graphic forms through various media, and a study of color and color theory as they apply to the major areas of theatrical design. Prerequisite: DRAM 1323 and DRAM 1321L.

**DRAM2683 Acting II (Sp)** (Formerly DRAM 4603) Advanced theories and techniques of acting. Prerequisite: DRAM 1223 and DRAM 1683.

**DRAM3001 Production Practicum (Sp, Su, Fa)** Credit for participation in technical assignments related to mainstage or faculty-directed productions: one (1) credit hour per production. Assignments shall be determined by the faculty. Credit will be awarded only after completion of assignments and only with faculty approval. May be repeated for up to 4 hours of degree credit.

**DRAM3011 Performance Practicum (Sp, Su, Fa)** Credit for performance in faculty directed productions; one credit hour per production. Assignments shall be determined by the faculty. Credit will be awarded only after satisfactory completion of assignment and with faculty approval. May be repeated for up to 4 hours of degree credit.

**DRAM3213 Costume Design I (Odd years, Fa)** Study of the art and practice of stage costume design. Emphasis on the expression of character through costume. Development of rendering and research skills. Prerequisite: DRAM 1313, DRAM 1311L, and DRAM 2313.

**DRAM3243 Costume Technology I (Odd years, Sp)** Advanced methods of costume construction techniques and the exploration of theatrical pattern drafting will be practiced through projects. Prerequisite: DRAM 1313.

**DRAM3433 Stage Speech (Sp, Su, Fa)** An introduction to the basic skills of speech, voice production and communication for performance and broadcasting. Special focus on General American speech and the characteristics of speech regionalisms. The course will explore breath control, resonance, articulation, pitch, volume, voice quality and stress management. Prerequisite: DRAM 1683.

**DRAM3653 Directing I (Sp)** Basic principles and techniques of play directing with an emphasis on the modern realistic mode of production. Corequisite: Drama majors with at least junior standing. Prerequisite: DRAM 1223, DRAM 1313, DRAM 1323 and DRAM 2683.

**DRAM3683 Stage Management (Odd years, Fa)** Principles of stage management in the context of academic and professional theatre production. Issues of theatre management and producing are addressed as they relate to play production activities. Prerequisite: DRAM 1223, DRAM 1313 and DRAM 1323.

**DRAM3733 Stage Lighting I (Even years, Fa)** Study of the art and practice of stage lighting; color theory; electricity and dimming systems; problems in design. Lecture-demonstration 3 hours, laboratory, by arrangement, coinciding with departmental productions, 3 hours per week. Prerequisite: DRAM 1323, DRAM 1321L, and DRAM 2313.

**DRAM3803 Development of the Drama (Sp, Fa)** An introductory survey of theoretical approaches to theatre and drama. This course investigates various paradigms for understanding drama across traditional period boundaries. Readings include a cross-section of literary and performance theories ranging from the classical to the post-modern. Prerequisite: DRAM 1223.

**DRAM3903 Theatrical Makeup (Even Years, Fa)** The techniques and skills of theatrical makeup and design involved in the creation and execution of character makeup for the stage. Prerequisite: DRAM 1313.

**DRAM3923H Honors Colloquium (Sp, Su, Fa)** Treats a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in drama).

**DRAM399VH Honors Course (Sp, Su, Fa) (1-6)** Prerequisite: Junior standing. May be repeated for up to 12 hours of degree credit.

**DRAM406V Playwriting (Fa) (1-3)** A workshop course for students who wish to attempt original work in the dramatic form. Prerequisite: Junior standing. May be repeated for up to 9 hours of degree credit.

**DRAM4153 Musical Theatre Performance (Sp, Su, Fa)** Principles and techniques of performing a singing role for the theatre. Examines the relationship between score and text. May be repeated for up to 6 hours of degree credit.

**DRAM4233 History of the Theatre I (Fa)** A survey of dramatic literature, theatre practices and cultural contexts for dramatic presentation from classical Greece through the Restoration. Prerequisite: DRAM 1223.

**DRAM4333 History of the Theatre II (Sp)** A survey of dramatic literature, theatre practices and cultural contexts for dramatic presentation from the 18th century to the mid-20th century. Emphasis is given to Western theatre practices. Prerequisite: DRAM 1223.

**DRAM4453 History of the Theatre III (Sp)** An examination of history and theory of modern theatrical styles.

**DRAM4463 African American Theatre History -- 1950 to Present (Sp)** A chronological examination of African-American theatre history from 1950 to the present through the study of African-American plays and political/social conditions. Upon completion of this course the student should be familiar with the major works of African-American theatre and have a deeper understanding of American history. (Same as AAST 499V)

**DRAM4653 Scene Design I (Odd years, Sp)** Theory and practice in the art of scenic design, including historical and contemporary styles and procedures. Practical experience gained through work on departmental productions. Prerequisite: DRAM 1323, DRAM 1321L and DRAM 2313.

**DRAM4733 Dramatic Criticism (Sp, Su, Fa)** Analysis of critical theories from Aristotle to the present; interrelationships of theatre disciplines as well as the influence of the church, state, and press on dramatic criticism. Prerequisite: DRAM 3803.

**DRAM4773 Acting Shakespeare (Irregular)** Work on the special techniques required for performance of the plays of special techniques required for performance of the plays of Shakespeare and his contemporaries. The cultural and theatrical context required for understanding the scripts. Special attention to the speaking of blank verse.

**DRAM490V Independent Study (Sp, Su, Fa) (1-3)** Individually designed and conducted programs of reading and reporting under the guidance of a faculty member. May be repeated for up to 3 hours of degree credit.

**DRAM491V Special Topics (Sp, Su, Fa) (1-3)** Classes not listed in the regular curriculum, offered on demand on the basis of student needs and changes within the profession.

**DRAM492V Internship (Irregular) (1-12)** Supervised practice in the various arts and crafts of the theatre (e.g., full design responsibility for a box office management; actor apprenticeship in a professional company). Available only to those who have exhausted the regular curricular possibilities in the area of specialization. May be repeated for up to 12 hours of degree credit.

**DRAM4953 Theatre Study in Britain (Sp, Su, Fa)** Study of the components of stage production through attending and critiquing a wide variety of classical, modern, and avant garde theatre productions in England; includes tours of London and historical British sites and seminars with British theatre artists.

**DRAM5123 Theatrical Design Rendering Techniques (Sp, Su, Fa)** Investigation of drawing and painting methods and materials useful to theatrical designers. Integration of graphic communication with overall production conceptualization will be explored through examination of various theatre styles and periods.

**DRAM5143 History of Decor for the Stage (Even years, Sp)** An overview of architectural decoration and its application to theatrical design from the Predynastic Period (4400-3200 B.C.) through the Art Deco period with references to contemporary decor. Prerequisite: Graduate standing.

**DRAM5163 Theatre Graphics and Technology (Irregular)** Advanced study of theatre drafting, drawing and rendering techniques and model making. Graduate level project portfolio required.

**DRAM5183 Scene Design Studio (Fa)** Individual and advanced projects in designing scenery for various theatrical genres as well as non-theatrical applications with emphasis on the design process involving playscript analysis, text analysis, and research. Collaboration skills and advanced rendering techniques will be explored. Contributes to on-going portfolio development. Prerequisite: DRAM 3653 or instructor consent. May be repeated for up to 6 hours of degree credit.

**DRAM5193 Scene Technology Studio (Sp)** Individual and advanced projects in scenic techniques with emphasis on scene painting, drafting, rendering, properties design, or scenic crafts as determined by student need. Contributes to on-going portfolio development. Prerequisite: Graduate standing or instructor consent. May be repeated for up to 9 hours of degree credit.

**DRAM5213 Costume Design (Odd years, Fa)** Advanced study of the art and practice of stage costume design. Emphasis on the expression of character through costume. Development of rendering and research skills. Portfolio development.

**DRAM5243 Costume Technology I (Odd years, Sp)** Advanced methods of costume construction techniques and the practice of theatrical pattern drafting will be explored through project work.

**DRAM5253 Costume Technology II (Even years, Sp)** Advanced study in methods of costume construction and pattern making techniques with emphasis on tailoring, draping, corsetry and costumes crafts as determined by student needs. Prerequisite: DRAM 3243 and DRAM 5243.

**DRAM5283 Costume Design Studio (Fa)** Individual and advanced projects in designing costumes for various theatrical genres with emphasis on the design process involving text interpretation, character analysis, and research. Collaboration skills and advanced rendering techniques will be explored. Contributes to on-going

portfolio development. Prerequisites: DRAM 3213 or DRAM 5213 or instructor consent.

**DRAM5293 Costume Technology Studio (Sp)** Individual and advanced projects in costume construction and techniques with emphasis on flat pattern, draping, corsetry, tailoring or costume crafts as determined by student need. Contributes to on-going portfolio development. Prerequisite: Graduate standing or instructor consent. May be repeated for up to 9 hours of degree credit.

**DRAM5353 Stage Lighting Technology (Sp, Su, Fa)** The thorough examination of the technology of equipment that supports the art of stage lighting design: theory, operating principles and specification of lamps, fixtures, control systems and special effect hardware will be explored. Prerequisite: graduate standing.

**DRAM5363 Theatre Planning (Irregular)** A study of significant theatre buildings, modern and historical, and their relationship to contemporary theatre planning. Practical application of theory through design problems and evaluation. Graduate level research project/paper required.

**DRAM5373 Theatre Management (Irregular)** Comprehensive study of arts management including personnel, budget, audience development, operations and organization for professional, academic and community theatre and related performance areas. Practical application through actual production experience in the University Theatre. Graduate level research paper required.

**DRAM5383 Lighting Technology Studio (Sp)** Individual and advanced projects in lighting technology with emphasis on light sources, lighting control, equipment design and specification and the mechanics of lighting. Contributes to on-going portfolio development. Prerequisites: Graduate standing or instructor consent. May be repeated for up to 9 hours of degree credit.

**DRAM5393 Lighting Design Studio (Fa)** Individual projects in lighting design with emphasis on the design process involving script interpretation, design aesthetics and research. Lighting design applications to a variety of venues will be studied. Contributes to on-going portfolio development. Prerequisite: Graduate standing or instructor consent. May be repeated for up to 6 hours of degree credit.

**DRAM5413 Graduate Acting Principles (Sp, Su, Fa)** An intensive study and practical application of acting techniques. Emphasizes the integration of the physical, emotional, and intellectual life of the character through work on monologues, scenes and exercises. Prerequisite: Graduate standing in Drama.

**DRAM5432 Graduate Stage Speech (Sp, Su, Fa)** Focus will be on enabling the body's natural breathing mechanism to provide strong vocal support. Freedom from unnecessary tension, resonance, articulation and vocal hygiene will also be explored as they relate to clear vocal production. Prerequisite: Graduate standing. May be repeated for up to 4 hours of degree credit.

**DRAM5443 Graduate Acting: Period Styles (Sp)** Styles of acting in relation to French and English Dramatic Literature (16th-19th Centuries). This course also examines the historical and cultural influences that shaped each genre. A period dance component is included. Prerequisite: Graduate standing in Drama.

**DRAM5453 Musical Theatre Performance (Sp, Su, Fa)** Theory and techniques of performing a singing role for the theatre. Integrates acting and vocal techniques and examines the relationship between score and text. Prerequisite: Graduate standing in Drama.

**DRAM5473 Graduate Acting: Shakespeare (Sp, Su, Fa)** Analysis of Shakespeare for performance. Work will include the plays of Shakespeare and his contemporaries, including cultural and theatrical contexts required for understanding the scripts. Prerequisite: Graduate standing in Drama.

**DRAM5523 Graduate Playwriting: Non-Realism (Sp, Su, Fa)** Advanced theory and technique in playwriting emphasizing non-traditional playwriting styles such as Expressionism, Surrealism, Epic Theatre and the American Musical. Prerequisite: Graduate standing.

**DRAM5533 Graduate Playwriting: Special Projects (Sp, Su, Fa)** Advanced study and practice in the area of playwriting. The area of concentration will be determined by the student's specific writing project(s). Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**DRAM5613 Graduate Directing Principles (Sp, Su, Fa)** Theory and technique of directing realistic drama: script analysis; spatial considerations of composition and picturization; development in production of the Aristotelian concepts of plot, character, thought, diction, music (sound), and spectacle. Prerequisite: Graduate standing.

**DRAM562V Seminar in Dramatic Art (Sp, Su, Fa) (1-9)** Research, discussion and projects focusing on a variety of topics including theatre management, advanced acting methods, and specialized periods in dramatic literature. Prerequisite: Senior or graduate standing. May be repeated for up to 9 hours of degree credit.

**DRAM5643 Dramaturgy (Irregular)** To define the dramaturge's role in theatrical production and to introduce students to working models of structural and dramaturgical analysis. Also to teach the application of these analytical models to various genres of dramatic literature. Prerequisite: Graduate standing.

**DRAM5683 Directing Studio (Sp, Fa)** Hands-on exploration into the direction of historical and contemporary texts and styles, including Greek, Roman, Shakespeare, Realism, American and international scripts and the adaptation of non-theatrical material. Topics vary each semester. Includes discussion and investigation of the theatrical arts and collaborative and production processes. Prerequisite: MFA Directing student or instructor consent. May be repeated for up to 6 hours of degree credit.

**DRAM5691 Scene Study for Directing Studio (Sp, Fa)** Participation as an actor in scenes presented for the graduate Directing Studio course. Varying historical and contemporary texts and styles each semester. Class meets one hour each week, plus outside rehearsals, depending on casting. Prerequisite: Instructor consent. May be repeated for up to 4 hours of degree credit.

**DRAM5723 History of the Theatre I (Fa)** A comprehensive study of the theatre in different cultures and ages, as an institution, as an art, and as a vision of life.

**DRAM5733 History of the Theatre II (Sp)** A continuation of DRAM 5723.

**DRAM5763 Dramatic Criticism (Fa)** Analysis of critical theories from Aristotle to the present; interrelationships of theatre disciplines as well as the influence of the church, state, and press on dramatic criticism. Prerequisite: Senior or graduate standing.

**DRAM581V Theatre Production III (Sp, Su, Fa) (1-3)** Participation in the process of production for the University Theatre mainstage at a supervisory level. Areas of involvement may include scenery, lighting, sound, makeup, marketing, etc. May be repeated for up to 6 hours of degree credit.

**DRAM590V Independent Study (Sp, Su, Fa) (1-3)** Individually designed and conducted programs of reading and reporting under guidance of a faculty member.

**DRAM591V Special Topics (Sp, Su, Fa) (1-3)** Classes not listed in the regular curriculum, offered on demand on the basis of student needs and changes within the profession. Prerequisite: Graduate standing in Drama or Instructor consent required.

**DRAM592V Internship (Irregular) (1-6)** Supervised practice in the various arts and crafts of the theatre (e.g. full design responsibility for a production; box office management; actor apprenticeship in a professional company).

**DRAM600V Master's Thesis (Sp, Fa) (1-6)** Prerequisite: Graduate standing.

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### English as Second Language (EASL)

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**EASL0021 Advanced English Grammar (Sp, Su, Fa)**

Presentation of a general overview of the verb, modal, and article in English. Review and practice on compound and complex sentences. Practice of grammatical structure orally and in writing. Not for degree credit. Prerequisite: ESL placement test.

**EASL0023 Reading and Writing I (Sp, Su, Fa)** Work on improving skills necessary to write a well-organized, thought-provoking essay incorporating paraphrased, summarized, and quoted ideas from various sources. Introduction to several rhetorical patterns. Critical reading skills practice, understanding inferences, and improving reading skills comprehension. Not for degree credit. Prerequisite: ESL placement test.

**EASL0033 Reading and Writing II (Sp, Su, Fa)** Advanced writing of formal documented, organized, and thought-provoking essays. Students will learn to read passages/articles in English proficiently and maintain discussion with near-native abilities and confidence. Not for degree credit. Corequisite: Lab component. Prerequisite: ESL placement test.

**EASL0041 Pronunciation (Sp, Su, Fa)** Students learn to generate native-sounding speech and increase their intelligibility by working specifically on accent reduction, pronunciation, intonation patterns, and fluency. Credit earned in this course may not be applied to the total required for a degree. Prerequisite: ESL placement test.

**EASL0053 ESL Listening and Speaking (Sp, Su, Fa)** For improvement of aural/oral skills by international students. Includes the basic practice in fluency, clarity, intonation, stress, and pronunciation. Students give presentations and participate in academic discussions. Credit earned in this course may not be applied to the total required for a degree. Prerequisite: ESL placement test.

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### Economics (ECON)

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**ECON2013 Principles of Macroeconomics (Sp, Su, Fa)** Macroeconomic analysis, including aggregate employment, income, fiscal and monetary policy, growth and business cycles. Prerequisite: (MATH 1203 or higher) or (MATH ACT of 25 or higher) or (MATH SAT of 580 or higher).

**ECON2013H Honors Principles of Macroeconomics (Fa)** Macroeconomic analysis, including aggregate employment, income, fiscal and monetary policy, growth and business cycles. Prerequisite: (MATH 1203 or higher) or (MATH ACT of 25 or higher) or (MATH SAT of 580 or higher).

**ECON2023 Principles of Microeconomics (Sp, Su, Fa)**

Microeconomic analysis, including market structures, supply and demand, production costs, price and output, and international economics. Prerequisite: (MATH 1203 or higher) or (MATH ACT of 25 or higher) or (MATH SAT of 580 or higher).

**ECON2023H Honors Principles of Microeconomics (Sp)** Microeconomic analysis, including market structures, supply and demand, production costs, price and output, and international economics. Prerequisite: (MATH 1203 or higher) or (MATH ACT of 25 or higher) or (MATH SAT of 580 or higher).

**ECON2143 Basic Economics-Theory and Practice (Sp, Su, Fa)** Surveys basic micro, macro principles and analytical tools needed to study contemporary economic problems such as inflation, unemployment, poverty, and pollution. Not open to students majoring in Economics or Business Administration.

**ECON3033 Microeconomic Theory (Sp, Su, Fa)** Nature, scope, and purpose of economic analysis; theories of demand, production, cost, firm behavior, allocation of resources, etc., in a market-oriented system. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143) and (MATH 2043 or MATH 2554).

**ECON3053 Economics for Elementary Teachers (Fa)** For students who plan to become teachers in elementary schools. Acquaints students with basic concepts and functioning of the American economic system. Not open to students majoring in Economics or Business Administration. Prerequisite: Students must have completed at least 60 hours of coursework.

**ECON3133 Macroeconomic Theory (Sp, Fa)** Theoretical determinations of national aggregate employment, income, consumption, investment, price level, etc. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143) and ((MATH 2043 or MATH 2554)).

**ECON3153 Economics of Electronic Commerce (Irregular)** A combination of concepts from microeconomics, industrial organization, and macroeconomics in examining how electronic markets and the use of information impact economic activity. The course combines theoretical models, field data and cases to explore the issues of pricing strategy, network effects, information goods, market mechanisms and verifiability. Prerequisite: ECON 2023 or ECON 2143.

**ECON3333 Public Economics (Irregular)** Governmental functions, revenues; tax shifting, incidence; public expenditures, their effects; and fiscal policy. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143.

**ECON3353 Law and Economics (Irregular)** The use of economic tools to analyze public policy issues and explore the intersections between the law and economics. The course will provide students with an understanding of legal institutions, incentives they generate and issues surrounding current legal reforms. Prerequisite: ECON 2023 or ECON 2143.

**ECON3433 Money and Banking (Sp, Fa)** Financial history; theory and practice of financial institutions; monetary policy in theory and practice. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143.

**ECON3533 Labor Economics (Fa)** Economic analysis of labor markets. Topics include analysis of labor demand and supply; human capital investment; wage differentials; discrimination; economic effects of labor unions and collective bargaining; public sector labor markets; unemployment; and labor market effects on inflation. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143

**ECON3633 Economics of Advertising (Irregular)** An examination of how economists define and categorize types of products and advertising campaigns. Alternative views of advertising -- persuasive vs. informative -- are discussed. Models of the relationship between advertising and sales, profits, market structure, product quality, and price are examined. Prerequisite: ECON 2023 or ECON 2143.

**ECON3843 Economic Development, Poverty, & the Role of the World Bank and IMF in Low-Income Countries (Fa)** Examine theories and patterns of economic development in emerging economies. The role of the World Bank and IMF as multilateral lenders and examination of their success and failures in fostering development. Measures of poverty and inequality and their implications for economic development. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143.

**ECON3853 Emerging Markets (Fa)** An analysis of the business and economic environment in emerging countries; focusing in Latin America, South East Asia and Transition Economies. The topics and issues covered include market structure and market failures, financial and legal background, current institutions and political economy issues, and current business opportunities. Prerequisite: ECON 2143; or ECON 2013 and ECON 2023.

**ECON3933 The Japanese Economic System (Sp)** This class presents essential facts about the Japanese economy and then subjects them to modern economic analyses. Japanese institutions and policies are contrasted with their American counterparts, and these economies are compared in terms of performance. Current issues including contemporary economic conditions and US - Japanese

trade relations are also examined. Pre- or Corequisite: ECON 2023. Prerequisite: ECON 2013 or ECON 2143.

**ECON399VH Honors Course (Irregular) (1-3)** Primarily for students participating in Honors program. May be repeated for up to 6 hours of degree credit.

**ECON4003H Honors Economics Colloquium (Irregular)** Explores events, concepts and/or new developments in the field of Economics. Prerequisite: Senior standing.

**ECON4033 History of Economic Thought (Sp)** Historical, critical analysis of economic theories relative to their instructional background. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143 or ECON 3053.

**ECON410V Special Topics in Economics (Irregular) (1-6)** Covers special topics in economics not available in other courses. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. May be repeated for up to 6 hours of degree credit.

**ECON410VH Honors Special Topics in Economics (Irregular) (1-6)** Covers special topics in economics not available in other courses. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. May be repeated for up to 6 hours of degree credit.

**ECON4143 Information Economics (Irregular)** A combination of concepts from microeconomics, industrial organization, and probability to examine how economic actors use information in decision-making. The course combines theoretical models and cases to develop an understanding of risk, uncertainty, insurance, and ambiguity. Prerequisite: ECON 2023 or ECON 2143.

**ECON4333 Economics of Organizations (Fa)** An economic perspective on the design of organizations. Applies developments in game theory and contract theory to analyze the role of information and incentives within and between firms. Covers the boundaries of firms, integration and outsourcing, authority and incentives, and alternative organizational structures in an evolving business environment. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143.

**ECON4423 Behavioral Economics (Fa)** Both economics and psychology systematically study human judgment, behavior, and well-being. This course surveys attempts to incorporate psychology into economics to better understand how people make decisions in economic situations. The course will cover models of choice under uncertainty, choice over time, as well as procedural theories of decision making. Prerequisite: ECON 2023 or ECON 2143.

**ECON4433 Experimental Economics (Sp)** The course offers an introduction to the field of experimental economics. Included are the methodological issues associated with developing, conducting, and analyzing controlled laboratory experiments. Standard behavioral results are examined and the implications of such behavior for business and economic theory are explored. Prerequisite: ECON 2023 or ECON 2143.

**ECON450V Independent Study (Irregular) (1-6)** Permits students on individual basis to explore selected topics in economics. May be repeated for up to 6 hours of degree credit.

**ECON4633 International Trade (Sp, Fa)** Problems of the international economy from a microeconomic perspective. Topics include analysis of the pattern and content of trade; trade in factors of production; and the applications of trade theory to the study of trade barriers such as tariffs and quotas. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143.

**ECON4643 International Macroeconomics and Finance (Sp, Fa)** Problems of the international economy from a macroeconomic perspective. Topics include national income accounting and the balance of payments; exchange rates and the foreign exchange markets; exchange rate policy; macroeconomic policy coordination; developing countries and the problem of 3rd world debt; and the global capital market. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143.

**ECON468V International Economics and Business Seminar (Irregular) (1-6)** Offered primarily in conjunction with international study abroad programs with an emphasis on international economics and business. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143. May be repeated for up to 6 hours of degree credit.

**ECON4743 Introduction to Econometrics (Sp)** Introduction to the application of statistical methods to problems in economics. Prerequisite: ((ECON 2013 and ECON 2023) or ECON 2143) and ((MATH 2053 or MATH 2053C) and MATH 2043) or (MATH 2554 or higher) and (WCOB 1033 or STAT 2303).

**ECON4753 Forecasting (Fa)** The application of forecasting methods to economics, management, engineering, and other natural and social sciences. The student will learn how to recognize important features of time series and will be able to estimate and evaluate econometric models that fit the data reasonably well and allow the construction of forecasts. Prerequisite: (ECON 2013 and ECON 2023 or ECON 2143) and (MATH 2043 or MATH 2554) and (MATH 2053 or MATH 2053C) and (WCOB 1033 or STAT 2303).

**ECON5233 Mathematics for Economic Analysis (Su)** This course will develop mathematical and statistical skills for learning economics and related fields. Topics include calculus, static optimization, real analysis, linear algebra, convex analysis, and dynamic

optimization. Prerequisite: Graduate standing and MATH 2554 or equivalent.

**ECON5243 Economics of Supply Chain & Retail (Sp)** This course will provide students with a strong foundation in core economics principles, with emphasis on industrial organization issues and applications geared toward the supply-chain and retail focus of the redesigned MBA program.

**ECON5433 Macroeconomic Theory I (Fa)** Theoretical development of macroeconomic models that include and explain the natural rate of unemployment hypothesis and rational expectations, consumer behavior, demand for money, market clearing models, investment, and fiscal policy.

**ECON5533 Microeconomic Theory I (Fa)** Introductory microeconomic theory at the graduate level. Mathematical formulation of the consumer choice, producer behavior, and market equilibrium problems at the level of introductory calculus. Discussion of monopoly, oligopoly, public goods, and externalities.

**ECON5613 Econometrics I (Fa)** Use of economic theory and statistical methods to estimate economic models. The single equation model is examined emphasizing multicollinearity, autocorrelation, heteroskedasticity, binary variables and distributed lags. Prerequisite: MATH 2043 and knowledge of matrix methods, which may be acquired as a corequisite and (AGEC 1103 or ECON 2023) and an introductory statistics course. (Same as AGEC 5613)

**ECON5853 International Economics Policy (Irregular)** An intensive analysis of the operation of the international economy with emphasis on issues of current policy interest. Prerequisite: ECON 5163.

**ECON600V Master's Thesis (Sp, Su, Fa) (1-6)**

**ECON6233 Microeconomic Theory II (Sp)** Advanced treatment of the central microeconomic issues using basic real analysis. Formal discussion of duality, general equilibrium, welfare economics, choice under uncertainty, and game theory.

**ECON6243 Macroeconomic Theory II (Sp)** Further development of macroeconomic models to include uncertainty and asset pricing theory. Application of macroeconomic models to explain real world situations.

**ECON6253 Microeconomics III (Fa)** This course will develop advanced concepts in information economics and game theory which will then be applied to the design of contracts, insurance, bargaining and auctions. Prerequisites: ECON 5533 and ECON 6233.

**ECON636V Special Problems in Economics (Sp, Su, Fa) (1-6)** Independent reading and investigation in economics. May be repeated for up to 6 hours of degree credit.

**ECON643V Seminar in Economic Theory and Research I (Fa) (1-3)**

**ECON644V Seminar in Economic Theory and Research II (Sp) (1-3)** Independent research and group discussion.

**ECON6533 Seminar in Advanced Economics I (Irregular)** This seminar will cover advanced fields of current research importance in economics. This will facilitate the development of research directions for doctoral study and research. Prerequisite: Graduate standing.

**ECON6543 Seminar in Advanced Economics II (Irregular)** This seminar will cover advanced fields of current research importance in economics. This will facilitate the development of research directions for doctoral study and research. Prerequisite: Graduate standing.

**ECON6623 Econometrics II (Sp)** Use of economic theory and statistical methods to estimate economic models. The treatment of measurement error and limited dependent variables and the estimation of multiple equation models and basic panel data models will be covered. Additional frontier techniques may be introduced. Prerequisites: ECON 5613 or AGEC 5613.

**ECON6633 Econometrics III (Sp)** Use of economic theory and statistical methods to estimate economic models. Nonlinear and semiparametric/nonparametric methods, dynamic panel data methods, and time series analysis (both stationary and nonstationary processes) will be covered. Additional frontier techniques may be covered. Prerequisite: ECON 5613 or AGEC 5613.

**ECON700V Doctoral Dissertation (Sp, Su, Fa) (1-18)**

Prerequisite: Candidacy.

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### Educational Foundations (EDFD)

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**EDFD2403 Statistics in Nursing (Sp)** Introduction to descriptive and inferential statistics used in nursing research.

**EDFD5303 Historical Foundations of Modern Education (Sp, Su)** Critical analysis and interpretation of the historical antecedents of contemporary education, focusing upon the American experience from the colonial period to the present.

**EDFD5323 Global Education (Irregular)** Comparative and global analysis of international education with emphasis on cultural education and implications for the future.

**EDFD5353 Philosophy of Education (Irregular)** Introduction to the method and attitude essential to effective analysis and interpre-

tation of issues and values within a society reflecting cultural, ethnic, gender, and global diversity. Prerequisite: Graduate standing.

**EDFD5373 Psychological Foundations of Teaching and Learning (Irregular)** Psychological principles and research applied to classroom learning and instruction. Social, emotional, and intellectual factors relevant to topics such as readiness, motivation, discipline, and evaluation in the classroom.

**EDFD5473 Adolescent Psychology in Education (Irregular)** Study of the adolescent experience with emphasis on the unique psychological problems and tasks of this developmental stage; role of educators in the facilitation of crises resolutions in social, personal and institutional conflicts. Prerequisite: Graduate standing.

**EDFD5573 Life-Span Human Development (Sp, Su, Fa)** Basic principles of development throughout the human life-cycle.

Physical, cognitive, social, emotional, and personality development.

**EDFD5673 Principles of Motivation (Sp)** This course focuses on theories and concepts of human motivation. Students explore what motivates students to learn and examine strategies, techniques, and interventions that promote and sustain learner motivation.

**EDFD5683 Issues in Educational Policy (Sp, Su, Fa)**

This course examines how K-12 education policy is designed and implemented in the United States. Students will develop a working knowledge of policymaking frameworks to examine major education policies of current interest and debate key policy issues that arise at each level of government.

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### Educational Leadership (EDLE)

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**EDLE5013 School Organization and Administration (Fa and Odd years, Su)** Analysis of structure and organization of American public education; fundamental principles of school management and administration.

**EDLE5023 The School Principalship (Sp, Su)** Duties and responsibilities of the public school building administrator; examination and analysis of problems, issues, and current trends in the theory and practice of the principalship.

**EDLE5033 Psychology of Learning (Sp, Odd years Su)**

This course prepares educational leaders to create and sustain a learning centered environment in school settings. Students will study learning theory across the lifespan and apply it to the practice of instructional leadership, curriculum design, and staff development.

**EDLE5043 Leadership Ethics (Fa, Odd years Su)** Leadership Ethics is an experiential based course grounded in ethical decision making theory that uses case study and practice to study school based ethical dilemmas.

**EDLE5053 School Law (Fa and Odd years, Su)** Legal aspects of public and private schooling; federal and state legislative statutes and judicial decisions, with emphasis upon Arkansas public education.

**EDLE5063 Instructional Leadership, Planning, and Supervision (Fa and Odd years, Su)** Instructional Leadership, Planning, and Supervision is designed to prepare practitioners to seize the role of educational leader at the school site level through the development of a vision that will be used to drive a data driven instructional school plan.

**EDLE5073 Research for Leaders (Sp, Odd years Su)** This course introduces research methodology that will support school leaders as consumers of educational research and supervisors of action research within their schools. Practical application of research for school leaders is emphasized.

**EDLE5083 Analytical Decision-Making (Sp, Even years Su)** Analytical Decision Making is a performance based examination of the principles and practices related to the building administrator's role in the development, administration, and evaluation of curricular programs in public schools. This includes creating a school culture, fostering communication, aligning curriculum with state mandated standards, and staff development.

**EDLE5093 Effective Leadership for School Improvement (Sp, Su, Fa)** A performance based examination of strategic planning, group facilitation and decision-making, organizational behavior and development, professional ethics and standards, student services administration, and principles of effective leadership.

**EDLE574V Internship (Sp, Su, Fa) (1-6)** Supervised in-school/district experiences individually designed to afford opportunities to apply previously-acquired knowledge and skills in administrative workplace settings. May be repeated for up to 3 hours of degree credit.

**EDLE599V Seminar (Sp, Su, Fa) (1-6)** May be repeated for up to 6 hours of degree credit.

**EDLE6023 School Facilities Planning and Management (Odd years, Fa)** School facilities planning, management, cost analysis, operations, and maintenance of the school plant.

**EDLE6053 School-Community Relations (Even years, Sp)** Community analysis, politics and education; power groups and influences; school issues and public responses; local policy development

and implementation; effective communication and public relations strategies.

**EDLE605V Independent Study (Sp, Su, Fa) (1-6)** May be repeated for up to 6 hours of degree credit.

**EDLE6093 School District Governance: The Superintendency (Even years, Fa)** Analysis of the organizational and governance structures of American public education at national, state, and local levels.

**EDLE6103 School Finance (Odd years, Sp)** Principles, issues and problems of school funding formulae and fiscal allocations to school districts.

**EDLE6173 School Business Management (Odd years, Su)** Fiscal and resource management in public schools: budgeting, insurance, purchasing, and accounting.

**EDLE6333 Advanced Fiscal and Legal Issues in Education (Odd years, Sp)** The examination and discussion of advanced legal and fiscal issues affecting public school education. Prerequisite: Advanced graduate standing.

**EDLE6503 Topics in Educational Research for School Administration (Odd years, Fa)** Application of educational research in the school setting by educational administrators. Emphasis placed on the use of state and local school or district data, data analysis, interpretation and reporting, hands-on experience with SPSS, and the formal process of writing a research report. Prerequisite: Advanced graduate standing.

**EDLE6523 Advanced Application of Educational Leadership (Odd years, Su)** A review of seminal and current works on leadership as applied to the educational setting. Provides knowledge of classic and contemporary strategies for leadership.

**EDLE6533 Educational Policy (Odd years, Sp)** Examination of the research and theory related to the evolution of local, state, and federal governance and educational policy. Emphasis given to the consideration of procedures involving policy formulation, implementation, and analysis.

**EDLE6563 Educational Administration and Human Behavior (Odd years, Fa)** Examination of research and theory related to the utilization of human resources with educational organizations.

**EDLE660V Workshop (Sp, Su, Fa) (1-6)** May be repeated for up to 6 hours of degree credit.

**EDLE674V Internship (Sp, Su, Fa) (1-6)** May be repeated for up to 6 hours of degree credit.

**EDLE680V Educational Specialist Project (Sp, Su, Fa) (1-6)** An original project, research project, or report required of all Ed.S. Degree candidates. Prerequisite: Admission to the Ed.S. program.

**EDLE699V Seminar (Sp, Su, Fa) (1-6)** Prerequisite: Advanced graduate standing. May be repeated for up to 6 hours of degree credit.

**EDLE700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Candidacy.

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### Education Reform (EDRE)

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**EDRE6023 Economics of Education (Sp)** This course applies the principles of economic analysis to education and education reform. Topics include: Human capital and signaling theories; education labor markets; educational production functions; public policy and market forces. The course also features empirical evidence evaluating economic theories of education.

**EDRE6033 Politics of Education (Fa)** This course explores historical and institutional forces that help shape education policymaking. Particular attention will be paid to the experience of past education reform movements as well as the influence of interest groups, federalism, bureaucracy, governance structures, public opinion, and judicial review on education policy.

**EDRE6043 Finance and Education Policy (Fa)** This course examines K-12 education finance from the standpoint of education reform policy. The tools of analysis include economics, public finance, law and political science. Topics include: revenue sources and fiscal federalism, standards-based reform and school finance, school funding formulas, adequacy lawsuits, the politics of school funding, school funding and markets. The course also features empirical evidence on the educational impact of education finance.

**EDRE6053 Measurement of Educational Outcomes (Sp)** This course will train students to consider the various types of outcome and assessment measures used for education at the K-12 level throughout the United States; further, the students will engage in analyses of research that relies on these various outcome measures.

**EDRE6213 Program Evaluation and Research Design (Fa)** This course provides students with training in the methods used to generate evidence-based answers to questions regarding the efficacy and impacts of education programs. The central questions that motivate most educational program evaluations are: (1) What is the problem? (2) What policies or programs are in place to address the problem? (3) What is their effect? (4) What works better? (5)

What are the relative benefits and costs of alternatives? (Same as ESRM 6613)

**EDRE6223 Research Seminar in Education Policy (Sp)** This course provides students with the opportunity to learn about education policy research by interacting directly with the leading scholars and practitioners in the field. Students will also gain a foundation in the field of education policy research by reading and discussing some of the founding works of the field.

**EDRE6413 Issues in Education Policy (Fa)** This course examines how K-12 education policy is designed and implemented in the United States. Students will develop a working knowledge of policymaking frameworks to examine major education policies of current interest and debate key policy issues that arise at each level of government. In great measure, the goals of the course will be accomplished through the consideration of opposing stances on key educational policy debates and issues that are of current import.

**EDRE6423 Seminar in School Choice Policy (Even years, Fa)** This course examines parental school choice - perhaps the most controversial education reform of our age. Students will be introduced to the full set of school choice policies, including charter schools and vouchers, and evaluate their benefits and drawbacks as educational interventions.

**EDRE6433 Seminar in Education Accountability Policy (Odd years, Sp)** This course examines K-12 school and district accountability under state and Federal law (e.g. NCLB), as well as teacher and student accountability (e.g. exit exams). Topics include the theory of incentives and politics of tradeoffs, measurement issues of policy implementation, and statistical evidence on policy effects on performance.

**EDRE6443 Seminar in Education Leadership Policy (Odd years, Fa)** This course will examine the individual and systemic prerequisites of effective leadership of schools and school systems, and effective leadership techniques. It will consider the differences between public and private sector leadership. It will also explore ways to identify effective and ineffective leaders, and design and evaluate systems to recruit and train the former and reassign the latter.

**EDRE6453 Seminar in Teacher Quality and Public Policy (Sp)** Examines how our public system of education shapes the preparation and continued professional development of K-12 teachers, and how that system has been influenced by standards-based education reform as well as efforts to enhance the quality of teaching and learning in public schools. Uses education reform legislation in several states as case studies to illustrate the successes and pitfalls of attempts to reform teacher education and licensure through public policy.

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### Education (EDUC)

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**EDUC100V Freshman Seminar (Irregular) (1-3)** The course is designed to support and assist freshmen in becoming successful, self-directed learners. Focus will be upon campus resources to help learners accomplish this goal and upon strategies for successful learning. May be repeated for up to 3 hours of degree credit.

**EDUC1012 College Learning I (Sp, Fa)** EDUC 1021 supports students as they make the transition into a university environment. The focus is on developing and applying college-level thinking and learning skills to specific University courses and on developing a student support base through a class learning community. The course is required for students admitted provisionally to the University.

**EDUC1021 College Learning II (Sp, Fa)** EDUC 1021 is a full-semester course required for those students who complete EDUC 1012 but still remain on provisional admission status. The focus is on long-term memory development, goal setting, preparing for a career, conducting research, and making presentations.

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### Electrical Engineering (ELEG)

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**ELEG2101L Electric Circuits I Laboratory (Fa)** Experimental investigation of the steady-state behavior of resistive circuits excited by DC sources and transient behavior of simple R, L, and C circuits. Topics include fundamental laws of circuit theory applied to resistive networks and time response functions of R-L and R-C circuits. Corequisite: ELEG 2103.

**ELEG2103 Electric Circuits I (Fa)** Introduction to circuit variables, elements, and simple resistive circuits. Analysis techniques applied to resistive circuits. The concept of inductance, capacitance and mutual inductance. The natural and step responses of RL, RC, and RLC circuits. Corequisite: ELEG 2101L. Prerequisite: MATH 2564.

**ELEG2111L Electric Circuits II Laboratory (Sp)** Experimental investigation of the steady-state behavior of circuits excited by sinusoidal sources. Topics include complex power, three-phase circuits, transformers, and resonance. Corequisite: ELEG 2113.

**ELEG2113 Electric Circuits II (Sp)** Introduction to complex numbers. Sinusoidal steady-state analysis of electric circuits, active, reactive, apparent and complex power; balanced and unbalanced three-phase circuits; mutual inductance; the use of the Laplace transform for electric circuit analysis and two-port networks. Pre- or

Corequisite: MATH 3404. Corequisite: ELEG 2111L. Prerequisite: ELEG 2103.

**ELEG2904 Digital Design (Fa)** To introduce students to modern logic concepts, problem solving and design principles, and vocabulary and philosophy of the digital world. (Same as CSCE 2114)

**ELEG2913 Digital Design II (Sp)** Topics in digital hardware design include memory systems to include registers and both static and dynamic RAM, finite state machine (FSM) design approach, FSM optimization, FSM minimization/reduction and assignment, asynchronous circuits, and PLD implementations. Students will also be introduced to Mentor design software as well as VHDL. Corequisite: Lab component. Prerequisite: ELEG 2903.

**ELEG3083H Honors Colloquium (Irregular)** Covers a special topic or issue, offered as part of the honors program. Prerequisite: Honor student.

**ELEG3121L System and Signal Laboratory (Fa)** Laboratory exercises associated with ELEG 3123 - System & Signal Analysis. Corequisite: ELEG 3123.

**ELEG3123 System & Signal Analysis (Fa)** Definition and description of signals and systems; analog, digital, continuous- and discrete-time and frequency analysis of systems, Z- and Fourier Transforms, sampling and signal reconstruction, filter design and engineering applications. Pre- or Corequisite: ELEG 3121L. Prerequisite: ELEG 2113.

**ELEG3123H Honors System & Signal Analysis (Fa)** Definition and description of signals and systems; analog, digital, continuous- and discrete-time and frequency analysis of systems, Z- and Fourier Transforms, sampling and signal reconstruction, filter design and engineering applications. Pre- or Corequisite: ELEG 3121L. Prerequisite: ELEG 2113.

**ELEG3211L Electronics I Laboratory (Fa)** Experimental investigation into electronic circuit analysis concepts. Topics include: diode behavior and applications, zener diode regulator design, bipolar junction transistor biasing, BJT common-emitter amplifier design, and operational amplifier fundamentals. Corequisite: ELEG 3213.

**ELEG3213 Electronics I (Fa)** Introduction to electronic systems and signal processing, operational amplifiers, diodes, non-linear circuit applications, MOSFETS, and BJTs. Corequisite: ELEG 3211L. Prerequisite: ELEG 2113 and PHYS 2074 and MATH 2574.

**ELEG3213H Honors Electronics I (Fa)** Introduction to electronic systems and signal processing, operational amplifiers, diodes, non-linear circuit applications, MOSFETS, and BJTs. Corequisite: ELEG 3211L. Prerequisite: ELEG 2113 and PHYS 2074 and MATH 2574.

**ELEG3221L Electronics II Laboratory (Sp)** Selected experiments to illustrate and complement topics covered in companion course ELEG 3223 - Electronics II Laboratory. Corequisite: ELEG 3223.

**ELEG3223 Electronics II (Sp)** Differential pair amplifier, current mirrors, active loads, multistage amplifiers, amplifier frequency response, bode plots, Millers theorem, short circuit and open circuit time constant methods, feedback amplifiers, and stability of feedback amplifiers. Corequisite: ELEG 3221L. Prerequisite: ELEG 3213 and MATH 3404.

**ELEG3223H Honors Electronics II (Sp)** Differential pair amplifier, current mirrors, active loads, multistage amplifiers, amplifier frequency response, bode plots, Millers theorem, short circuit and open circuit time constant methods, feedback amplifiers, and stability of feedback amplifiers. Corequisite: ELEG 3221L. Prerequisite: ELEG 3213 and MATH 3404.

**ELEG3301L Electromechanical Energy Conversion Laboratory (Sp)** This course is the associated laboratory component of ELEG 3303 - Electromechanical Energy Conversion. The following topics are covered: three-phase measurements, no-load, short-circuit and load tests of transformers, no-load, blocked-rotor and load tests of induction machines and synchronous machines, and speed control of induction machines. Corequisite: ELEG 3303.

**ELEG3303 Electromechanical Energy Conversion (Sp)** Steady state analysis of DC machines, transformers, induction machines and synchronous machines. Introduction to speed control of electric machines using power electronics. Corequisite: ELEG 3301L. Prerequisite: ELEG 2113 or (PHYS 2074 and ELEG 3903).

**ELEG3303H Honors Electromechanical Energy Conversion (Sp)** Steady state analysis of DC machines, transformers, induction machines and synchronous machines. Introduction to speed control of electric machines using power electronics. Corequisite: ELEG 3301L. Prerequisite: ELEG 2113 or (PHYS 2074 and ELEG 3903).

**ELEG3703 Electromagnetics I (Sp)** Analysis of transmission lines with sinusoidal and transient excitation. Development and use of the Smith Chart and methods of impedance matching. Vector analysis, static form of Maxwell's equations, electrostatics, and magnetostatics. Pre- or Corequisite: PHYS 2074 and MATH 2574.

**ELEG3703H Honors Electromagnetics I (Sp)** Analysis of transmission lines with sinusoidal and transient excitation. Development and use of the Smith Chart and methods of impedance

matching. Vector analysis, static form of Maxwell's equations, electrostatics, and magnetostatics. Pre- or Corequisite: PHYS 2074 and MATH 2574.

**ELEG388V Special Problems (Irregular) (1-18)** One to 3 hours of credit. Individual study and research on a topic mutually agreeable to the student and a faculty member. Prerequisite: Junior standing. May be repeated for up to 18 hours of degree credit.

**ELEG388VH Honors Special Problems (Irregular) (1-18)** One to 3 hours of credit. Individual study and research on a topic mutually agreeable to the student and a faculty member. Prerequisite: junior standing.

**ELEG3903 Electric Circuits and Machines (Sp, Fa)** Basic electrical principles and circuits, some application to electromechanical systems. For engineering students other than those in electrical engineering. Prerequisite: MATH 2564 and PHYS 2074.

**ELEG3913 Engineering Electronics (Fa)** Basic theory and applications of electronic devices and circuits. For engineering students other than those in electrical engineering. Prerequisite: ELEG 3903.

**ELEG3923 Microprocessor Systems Design (Sp, Fa)** Introduction to 16-bit microprocessors and their application. Microprocessor architecture and program language; interface devices; system design using microprocessors. Laboratory application. Corequisite: lab component. Prerequisite: ELEG 2903 or ELEG 3913.

**ELEG3923H Honors Microprocessor Systems Design (Sp, Fa)** Introduction to 16-bit microprocessors and their application. Microprocessor architecture and program language; interface devices; system design using microprocessors. Laboratory application. Corequisite: lab component. Prerequisite: ELEG 2903 or ELEG 3913.

**ELEG3933 Circuits & Electronics (Sp)** Basic principles of electric and electronic circuits and devices. Prerequisite: MATH 3404 and PHYS 2074.

**ELEG400V Senior Thesis (Sp, Su, Fa) (1-3)** Prerequisite: Senior standing.

**ELEG400VH Honors Senior Thesis (Sp, Su, Fa) (1-3)** Prerequisite: senior standing.

**ELEG4061 Electrical Engineering Design I (Sp, Fa)** Design and application in electrical engineering. Prerequisite: ELEG 3223 and ELEG 3923.

**ELEG4061H Honors Electrical Engineering Design I (Sp, Fa)** Design and application in electrical engineering. Prerequisite: ELEG 3223 and ELEG 3923.

**ELEG4071 Electrical Engineering Design II (Sp, Fa)** Design and application in electrical engineering. Prerequisite: ELEG 4061.

**ELEG4071H Honors Electrical Engineering Design II (Sp, Fa)** Design and application in electrical engineering. Prerequisite: ELEG 4061.

**ELEG4143 Stochastic Signal Processing (Fa)** Review of system analysis, probability, random variables, stochastic processes, auto correlation, power spectral density, systems with random inputs in the time and frequency domain, and applications. Pre- or Corequisite: ELEG 3123.

**ELEG4143H Honors Stochastic Signal Processing (Fa)** Review of system analysis, probability, random variables, stochastic processes, auto correlation, power spectral density, systems with random inputs in the time and frequency domain, and applications. Pre- or Corequisite: ELEG 3123.

**ELEG4203 Semiconductor Devices (Irregular)** Crystal properties and growth of semiconductors, energy bands and charge carriers in semiconductors, excess carriers in semiconductors, analysis and design of p/n junctions, analysis and design of bipolar junction transistors, and analysis and design of field-effect transistors. Prerequisite: MATH 3404 and ELEG 3213, or graduate standing.

**ELEG4203H Honors Semiconductor Devices (Irregular)** Crystal properties and growth of semiconductors, energy bands and charge carriers in semiconductors, excess carriers in semiconductors, analysis and design of p/n junctions, analysis and design of bipolar junction transistors, and analysis and design of field-effect transistors. Prerequisite: MATH 3404.

**ELEG4213 MEMS and Microsensors (Fa)** The aim of this course is to teach the theory and developments in MEMS, microsensors, NEMS and smart devices and to train the students for the fabrication using microfabrication tools in the clean room. The students will design, fabricate and characterize a MEMS/Microsensor device during the lab hours at the HiDEC clean room.

**ELEG4223 Design and Fabrication of Solar Cells (Irregular)** Solar insolation and its spectral distribution; p-n junction solar cells in dark and under illumination; solar cell parameters efficiency limits and losses; standard cell technology; energy accounting; design of silicon solar cells using simulation; fabrication of designed devices in the lab and their measurements.

**ELEG4233 Introduction to Integrated Circuit Design (Irregular)** Design and layout of large scale digital integrated circuits using NMOS and CMOS technology. Topics include MOS devices and basic circuits, integrated circuit layout and fabrication, dynamic logic, circuit design, and layout strategies for large scale NMOS and CMOS circuits. Prerequisite: ELEG 3213 or ELEG 3933 and MATH 3404.

(Same as CSCE 4333)

**ELEG4233H Honors Introduction to Integrated Circuit Design (Irregular)** Design and layout of large scale digital integrated circuits using NMOS and CMOS technology. Topics include MOS devices and basic circuits, integrated circuit layout and fabrication, dynamic logic, circuit design, and layout strategies for large scale NMOS and CMOS circuits. Prerequisite: ELEG 3213 or ELEG 3933 and MATH 3404. (Same as CSCE 4333)

**ELEG4243 Analog Integrated Circuits (Irregular)** Theory and design techniques for linear and analog integrated circuits. Current mirrors, voltage to base emitter matching, active loads, compensation, level shifting, amplifier design techniques, circuit simulation using computer-assisted design programs. Prerequisite: ELEG 3223.

**ELEG4253 Nanotechnology (Irregular)** The objective of this course is to present a concise and concurrent introduction to Nanotechnology and its applications in engineering and medicine, particularly for nanoelectronics, nanosensors and nanocomputing. This course presents basic aspects of the nanotechnology, its fabrication and imaging technologies and integration of biomolecules with electronic systems for the design of devices in nanoelectronics, nanobioelectronics and Nanomedicine. Prerequisite: Senior standing or instructor permission. May be repeated for up to 6 hours of degree credit.

**ELEG4283 Mixed Signal Test Engineering I (Irregular)** Overview of mixed signal testing, the test specification process, DC and parametric measurements, measurement accuracy, tester hardware, sampling theory, DSP-based testing, analog channel testing, digital channel testing. Prerequisite: Senior or graduate standing.

**ELEG4293 Mixed-Signal Modeling & Simulation (Irregular)** Study of basic analog, digital & mixed signal simulation solution methods. Modeling with hardware description languages. Use of state-of-the-art simulators and HDLs. Prerequisite: ELEG 3223

**ELEG4323 Switch Mode Power Conversion (Irregular)** Basic switching converter topologies: buck, boost, buck-boost, Cuk, flyback, resonant; pulse-width modulation; integrated circuit controllers; switching converter design case studies; SPICE analyses of switching converters; state-space averaging and linearization; and switching converter transfer functions. Prerequisite: ELEG 3223 and ELEG 3123.

**ELEG4403 Control Systems (Irregular)** Mathematical modeling of dynamic systems, stability analysis, control system architectures and sensor technologies. Time-domain and frequency-domain design of feedback control systems: lead, lag, PID compensators. Special topics in microprocessor implementation. Prerequisite: ELEG 3123. (Same as MEEG 4213)

**ELEG4403H Honors Control Systems (Irregular)** Mathematical modeling of dynamic systems, stability analysis, control system architectures and sensor technologies. Time-domain and frequency-domain design of feedback control systems: lead, lag, PID compensators. Special topics in microprocessor implementation. Prerequisite: ELEG 3123.

**ELEG4413 Advanced Control Systems (Irregular)** A second course in linear control systems. Emphasis on multiple-input and multiple-output systems: State-space analysis, similarity transformations, eigenvalue and eigenvector decomposition, stability in the sense of Lyapunov, controllability and observability, pole placement, quadratic optimization. Credit not given for both ELEG 4413 and ELEG 5403. Prerequisite: ELEG 4403 or equivalent course.

**ELEG4463L Control Systems Laboratory (Irregular)** Experimental study of various control systems and components. The use of programmable logic controllers in the measurement of systems parameters, ladder-logic applications, process-control applications, and electromechanical systems. Prerequisite: ELEG 4403.

**ELEG4503 Design of Advanced Electric Power Distribution Systems (Irregular)** Design considerations of electric power distribution systems, including distribution transformer usage, distribution system protection implementation, primary and secondary networks design, applications of advanced equipment based on power electronics, and use of capacitors and voltage regulation. Prerequisite: ELEG 3303.

**ELEG4503H Honors Design of Advanced Electric Power Distribution Systems (Irregular)** Design considerations of electric power distribution systems, including distribution transformer usage, distribution system protection implementation, primary and secondary networks design, applications of advanced equipment based on power electronics, and use of capacitors and voltage regulation. Prerequisite: ELEG 3303.

**ELEG4513 Power and Energy Systems Analysis (Irregular)** Modeling and analysis of electric power systems: Energy sources and conversion; load flow analysis; reference frame transformations; symmetrical and unsymmetrical fault conditions; load forecasting and economic dispatch. Prerequisite: ELEG 2113.

**ELEG4623 Communication Systems (Irregular)** Various modulation systems used in communications. AM and FM fundamentals, pulse modulation, signal to noise ratio, threshold in FM, the

phase locked loop, matched filter detection, probability of error in PSK, FKS, and DPSK. The effects of quantization and thermal noise in digital systems. Information theory and coding. Pre- or Corequisite: ELEG 4143.

**ELEG4723 Introduction to RF and Microwave Design (Irregular)** An introduction to microwave design principles. Transmission lines, passive devices, networks, impedance matching, filters, dividers, and hybrids will be discussed in detail. Active microwave devices will also be introduced. In addition, the applications of this technology as it relates to radar and communications systems will be reviewed. Prerequisite: ELEG 3703.

**ELEG4723H Honors Introduction to RF and Microwave Design (Irregular)** An introduction to microwave design principles. Transmission lines, passive devices, networks, impedance matching, filters, dividers, and hybrids will be discussed in detail. Active microwave devices will also be introduced. In addition, the applications of this technology as it relates to radar and communications systems will be reviewed. Prerequisite: ELEG 3703.

**ELEG4733 Introduction to Antennas (Irregular)** Basic antenna types: small dipoles, half wave dipoles, image theory, monopoles, small loop antennas. Antenna arrays: array factor, uniformly excited equally spaced arrays, pattern multiplication principles, nonuniformly excited arrays, phased arrays. Use of MATLAB programming and mathematical techniques for antenna analysis and design. Emphasis will be on using simulation to visualize variety of antenna radiation patterns. Prerequisite: ELEG 3703.

**ELEG4733H Honors Introduction to Antennas (Irregular)** Basic antenna types: small dipoles, half wave dipoles, image theory, monopoles, small loop antennas. Antenna arrays: array factor, uniformly excited equally spaced arrays, pattern multiplication principles, nonuniformly excited arrays, phased arrays. Use of MATLAB programming and mathematical techniques for antenna analysis and design. Emphasis will be on using simulation to visualize variety of antenna radiation patterns. Prerequisite: ELEG 3703.

**ELEG4773 Electronic Response of Biological Tissues (Irregular)** Understand the electric and magnetic response of biological tissues with particular reference to neural and cardiovascular systems. Passive and active forms of electric signals in cell communication. We will develop the central electrical mechanisms from the membrane channel to the organ, building on those excitation, dielectric models for tissue behavior, Debye, Cole-Cole models. Role of bound and free water on tissue properties. Magnetic response of tissues. Experimental methods to measure tissue response. Applications to Electrocardiography & Electroencephalography, Microwave Medical Imaging, RF Ablation will be discussed that are common to many electrically active cells in the body. Analysis of Nerst equation, Goldman equation, linear cable theory, and Hodgkin-Huxley Model of action potential generation and propagation. High frequency response of tissues to microwave. Prerequisites: ELEG 3703 or equivalent; MATH 3404 or equivalent; basic Biology. (Same as BENG 4283)

**ELEG487V Special Topics in Electrical Engineering (Irregular) (1-3)** Consideration of current electrical engineering topics not covered in other courses. Prerequisite: Senior standing. May be repeated for up to 6 hours of degree credit.

**ELEG487VH Honors Special Topics in Electrical Engineering (Irregular) (1-3)** Consideration of current electrical engineering topics not covered in other courses. Prerequisite: Senior standing. May be repeated for up to 6 hours of degree credit.

**ELEG488V Special Problems (Sp, Su, Fa) (1-3)** Individual study and research on a topic mutually agreeable to the student and a faculty member. Prerequisite: Senior standing. May be repeated for up to 3 hours of degree credit.

**ELEG488VH Honors Special Problems (Irregular) (1-3)** Individual study and research on a topic mutually agreeable to the student and a faculty member. Prerequisite: senior standing.

**ELEG4914 Advanced Digital Design (Irregular)** To master advanced logic design concepts, including the design and testing of synchronous and asynchronous combinational and sequential circuits using state of the art CAD tools. Prerequisite: ELEG 2904 or CSCE 2114. (Same as CSCE 4914)

**ELEG4963 CPLD/FPGA Based System Design (Irregular)** Field Programmable logic devices (FPGAs/CPLDs) have become extremely popular as basic building blocks for digital systems. They offer a general architecture that users can customize by inducing permanent or reversible physical changes. This course will deal with the implementation of logic options using these devices. Corequisite: Lab component. Prerequisite: ELEG 2913. (Same as CSCE 4353)

**ELEG4963H Honors CPLD/FPGA Based System Design (Irregular)** Field Programmable logic devices (FPGAs/CPLDs) have become extremely popular as basic building blocks for digital systems. They offer a general architecture that users can customize by inducing permanent or reversible physical changes. This course will deal with the implementation of logic options using these devices. Corequisite: Lab component. Prerequisite: ELEG 2913. (Same as CSCE 4353)



**ELEG4983 Computer Architecture (Irregular)** Design of a single board computer including basic computer organization, memory subsystem design, peripheral interfacing, DMA control, interrupt control, and bus organization. Prerequisite: ELEG 3923. (Same as CSCE 4213)

**ELEG5173L Digital Signal Processing Laboratory (Irregular)** Use of DSP integrated circuits. Lectures, demonstrations, and projects. DSP IC architectures and instruction sets. Assembly language programming. Development tools. Implementation of elementary DSP operations, difference equations, transforms and filters. Prerequisite: ELEG 4603.

**ELEG5193L Advanced DSP Processors Laboratory (Irregular)** Familiarization with, and use of, advanced DSP processors. Parallel processor configurations, timing consideration, specialized programming techniques, and complex pipelines. Prerequisite: ELEG 5173L.

**ELEG5213 Integrated Circuit Fabrication Technology (Irregular)** Theory and techniques of integrated circuit fabrication technology; crystal growth, chemical vapor deposition, impurity diffusion, oxidation, ion implantation, photolithography and medulization. Design and analysis of device fabrication using SUPREM and SEDAN. In-process analysis techniques. Student review papers and presentations on state of the art fabrication and device technology. Prerequisite: ELEG 4203.

**ELEG5243L Microelectronic Fabrication Techniques and Procedures (Sp, Fa)** The Thin-Film Fabrication course is designed to prepare students to use the thin-film equipment and processes available at the Engineering Research Center's thin-film cleanroom. The process modules to be trained on include lithography, metal deposition and etching, oxide deposition, growth and etching, reactive dry etching, tantalum anodization, photodefinable spin-on dielectric and electroplating. The related metrology modules include microscope inspection, spectrophotometric measurement of oxide, profilometry and four-point probe measurements. Prerequisite: ELEG 5273.

**ELEG5253L Integrated Circuit Design Laboratory I (Irregular)** Design and layout of large scale digital integrated circuits. Students design, check, and simulate digital integrated circuits which will be fabricated and tested in I.C. Design Laboratory II. Topics include computer-aided design, more in-depth coverage of topics from ELEG 4233, and design of very large scale chips. Prerequisite: ELEG 4233.

**ELEG5263L Integrated Circuit Design Laboratory II (Irregular)** Students test the I.C. chips they designed in I.C. Design Laboratory I and propose design corrections where needed. Topics include gate arrays, bipolar design, I<sup>2</sup>L, memory design, and micro-processor design. Prerequisite: ELEG 5253L.

**ELEG5273 Electronic Packaging (Irregular)** An introductory treatment of electronic packaging, from single chip to multichip, including materials, substrates, electrical design, thermal design, mechanical design, package modeling and simulation, and processing considerations. Credit cannot be earned for both MEEG 5273 and ELEG 5273. Prerequisite: (ELEG 3213 or ELEG 3913) and MATH 3404. (Same as MEEG 5273)

**ELEG5283 Mixed Signal Test Engineering II (Irregular)** Focus calibrations, DAC testing, ADC testing, DIB design, Design for Test, Data Analysis, and Test Economics. Prerequisite: ELEG 4283.

**ELEG5293L Integrated Circuits Fabrication Laboratory (Irregular)** Experimental studies of silicon oxidation, solid-state diffusion, photolithographical materials and techniques, bonding and encapsulation. Fabrication and testing of PN diodes, NPN transistors and MOS transistors. Prerequisite: ELEG 5213.

**ELEG5313 Power Semiconductor Devices (Irregular)** Carrier transport physics; breakdown phenomenon in semiconductor devices; power bipolar transistors, thyristors, power junction field-effect transistors, power field-controlled diodes, power metal-oxide-semiconductor field-effect transistors, and power MOS-bipolar devices. Prerequisite: ELEG 4203.

**ELEG5323 Semiconductor Nanostructures I (Irregular)** This course is focused on the basic theoretical and experimental analyses of low dimensional systems encountered in semiconductor heterojunctions and nanostructures with the emphasis on device applications and innovations. Prerequisite: ELEG 4203 or instructor permission.

**ELEG5333 Semiconductor Nanostructures II (Irregular)** This course is a continuation of ELEG 5323 Semiconductors Nanostructures I. It is focused on the transport properties, growth, electrical and optical properties of semiconductor nanostructures, and optoelectronic devices. Prerequisite: ELEG 5323 or instructor permission.

**ELEG5403 Systems Theory (Irregular)** A unified state-space approach to continuous and discrete systems. System dynamics, local transition functions, reachability, observability, and global behavior of systems. Prerequisite: ELEG 4403.

**ELEG5423 Optimal Control Systems (Irregular)** Basic concepts, conditions for optimality, the minimum principle, the Hamilton Jacobi equation, structure and properties of optimal systems.

Prerequisite: ELEG 4403.

**ELEG5433 Digital Control Systems (Irregular)** Signal processing in continuous-discrete systems. System modeling using the z-transform and state-variable techniques. Analysis and design

of digital control systems. Digital redesign for continuous control.

Prerequisite: ELEG 4403.

**ELEG5443 Nonlinear Systems Analysis and Control (Irregular)** Second-order nonlinear systems. Nonlinear differential equations. Approximate analysis methods. Lyapunov and input-output stability. Design of controllers, observers, and estimators for nonlinear systems. Prerequisite: ELEG 4403 or MATH 5303.

**ELEG5453 Adaptive Filtering and Control (Irregular)** Models for deterministic systems. Parameter estimation. Adaptive control. Stochastic models. Stochastic state and parameter estimation. Adaptive control of stochastic systems. Prerequisite: ELEG 3143 and ELEG 4403.

**ELEG5513 Electric Power Quality (Irregular)** The theory and analysis of electric power quality for industrial and commercial power systems. Specific topics include: grounding, shielding, wiring considerations, instrumentation, site surveys and analysis, case studies, specification and selection of power system components, and recommended design and installation practice. Prerequisite: ELEG 3303 and MATH 3404.

**ELEG5533 Power Electronics and Motor Drives (Irregular)** V-1 characteristics of insulated Gate Bipolar Transistors (IGBTs) and MOS-controlled Thyristors (MCTs), design of driver and snubber circuits, induction-, permanent magnet-, and brushless dc-motor drives; and resonant inverters. Prerequisite: Graduate standing or (ELEG 3223 and ELEG 3303).

**ELEG5613 Introduction to Telecommunications (Irregular)** Overview of public and private telecommunication systems; traffic engineering; communications systems basics, information technology, electromagnetics, and data transmission. Prerequisite: ELEG Graduate Standing or ELEG 3133. (Same as CSCE 5613)

**ELEG5653 Artificial Neural Networks (Irregular)** Fundamentals of artificial neural networks, both theory and practice. Teaches basic concepts of both supervised and unsupervised learning, and how they are implemented using artificial neural networks. Topics include the perceptron, back propagation, the competitive Hamming net, self organizing feature maps, topological considerations, requirements for effective generalization, subpattern analysis, etc. Prerequisite: MATH 3403.

**ELEG5693 Wireless Communications (Irregular)** Comprehensive course in fast developing field of wireless mobile/cellular personal telecommunications. Topics include cellular system structures, mobile radio propagation channels, etc. Prerequisite: Graduate standing.

**ELEG5713 Antennas and Radiation (Irregular)** Radio frequency antennas, control of radiation patterns, antenna impedance and antenna feeding systems. Prerequisite: ELEG 3703.

**ELEG5723 Advanced Microwave Design (Irregular)** This course is an advanced course in microwave design building on the introduction to microwave design course. A detailed discussion of active devices, biasing networks, mixers, detectors, Microwave Monolithic Integrated Circuits (MMIC), and wideband matching networks will be provided. In addition, a number of advanced circuits will be analyzed. Prerequisite: ELEG 3703 and ELEG 4723.

**ELEG5763 Advanced Electromagnetic Scattering & Transmission (Irregular)** Reflection and transmission of electromagnetic waves from a flat interface, the Poynting theorem, the complex and average power, the rectangular wave guides, TE and TM modes, radiation from antennas in free space and introduction to computational electromagnetics. Prerequisite: ELEG 3703.

**ELEG5773 Electronic Response of Biological Tissues (Irregular)** Understand the electric and magnetic response of biological tissues with particular reference to neural and cardiovascular systems. Passive and active forms of electric signals in cell communication. We will develop the central electrical mechanisms from the membrane channel to the organ, building on those that are common to many electrically active cells in the body. Analysis of Nernst equation, Goldman equation, linear cable theory, and Hodgkin-Huxley Model of action potential generation and propagation. High frequency response of tissues to microwave excitation, dielectric models for tissue behavior, Debye, Cole-Cole models. Role of bound and free water on tissue properties. Magnetic response of tissues. Experimental methods to measure tissue response. Applications to Electrocardiography & Electroencephalography, Microwave Medical Imaging, RF Ablation will be discussed. Students may not receive credit for both ELEG 4773 and ELEG 5773. Prerequisite: MATH 3404, ELEG 3703 or PHYS 3414, BIOL 2533 or equivalent (Same as BENG 5283)

**ELEG5801 Graduate Seminar (Sp, Su, Fa)** Papers presented by candidates for the Master of Science degree in electrical engineering on design problems, or new developments in the field of electrical engineering.

**ELEG587V Special Topics in Electrical Engineering (Irregular) (1-3)** Consideration of current electrical engineering topics

not covered in other courses. Prerequisite: Graduate standing. May be repeated for up to 3 hours of degree credit.

**ELEG588V Special Problems (Sp, Su, Fa) (1-6)** Opportunity for individual study of advanced subjects related to a graduate electrical engineering program to suit individual requirements. May be repeated for up to 6 hours of degree credit.

**ELEG600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**ELEG6273 Advanced Electronic Packaging (Irregular)** An advanced treatment of electronic packaging covering a diverse range of packaging applications. Topics include packaging tradeoffs and decisions, design and CAD, assembly single-chip packaging, discrete and integrated passives, MEMS and optoelectronic packaging, RF and microwave packaging, multichip packaging, reliability, and economic considerations. Prerequisite: ELEG 5273. (Same as MEEG 6273)

**ELEG6801 Graduate Seminar (Sp, Su, Fa)** Papers presented by candidates for the Doctor of Philosophy degree in electrical engineering on current research or design problems in the field of electrical engineering.

**ELEG700V Doctoral Dissertation (Sp, Su, Fa) (1-18)**

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### Environmental Dynamics (ENDY)

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**ENDY5033 Advanced Vector Geographic Information Systems (Irregular)** Advanced vector operations and analysis.

Topics will include topological analysis, network analysis, geocoding, conflation, implications of source and product map scale, map generalization, error mapping, and cartographic production. Prerequisite: ANTH 4563 or GEOS 4583 or equivalent. (Same as ANTH 5043, GEOS 5033)

**ENDY5043 GIS Analysis and Modeling (Odd years, Sp)**

Advanced raster topics are examined with a theoretical and methodological review of Tomlin's cartographic modeling principles. Topics vary and include fourier methods, image processing, kriging, spatial statistics, principal components, fuzzy and regression modeling, and multi-criteria decision models. Several raster GIS programs are examined with links to statistical analysis software. Prerequisite: (ANTH 4553 or GEOG 4553) or equivalent.

**ENDY5053 Quaternary Environments (Fa)** An interdisciplinary study of the Quaternary Period including dating methods, deposits soils, climates, tectonics and human adaptations. (Same as ANTH 5053, GEOS 5053)

**ENDY5063 Climate Through Time (Sp)** The earth's climate history over the last 2 million years and the influence various factors have had on it; compilation and paleoclimatic histories and methods of dating climatic effects. Prerequisite: GEOG 4363 or equivalent. (Same as BIOL 5063, GEOS 5063)

**ENDY5113 Global Change (Fa)** Examines central issues of global change including natural and human induced climate change, air pollution, deforestation, desertification, wetland loss urbanization, and the biodiversity crisis. The U.S. Global Change Research Program is also examined. Prerequisite: Graduate standing. (Same as GEOG 5113)

**ENDY5153 Environmental Site Assessment (Irregular)**

Principles, problems, and methods related to conducting an environmental site assessment. An applied course covering field site assessment, regulatory documentation, and report preparation. Prerequisite: GEOL 4033. (Same as GEOL 5153)

**ENDY5853 Environmental Isotope Geochemistry (Sp)**

Introduction to principles of isotope fractionation and distribution in geological environments isotopic analytical methods, and extraction of isotope samples; application of isotopes in characterization of geologic processes and interaction with hydrologic, surficial, and biologic attenuation, paleothermometry soil and biochemical processes. Prerequisite: GEOL 5063 or GEOL 5263. (Same as GEOS 5853)

**ENDY6013 Environmental Dynamics (Irregular)** Required course for ENDY doctoral candidates. Overview of Earth Systems: Lithosphere; Hydrosphere, Atmosphere, Biosphere, Cryosphere, and human interaction across Earth systems. Emphasis on understanding of processes within Earth systems and interactions across Earth Systems as they pertain to global self-regulation, secular variation, climate stability, development and sustainability of human societies. Prerequisite: Graduate standing.

**ENDY6023 Seminar in Environmental Dynamics (Irregular)**

Seminar examining specific contemporary topic of topics in Environmental Dynamics. Topics will change with each offering. Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**ENDY602V Current Topics Seminar (Irregular) (1-2)** Various aspects of the environment will be explored through topic specific seminars. Subject matter will change each semester addressing current environmental issues and research. Seminars will be one or two hours credit. Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**ENDY6033 Society and Environment (Sp)** This course examines the complex interrelationships between human societies and the natural environment. Drawing on diverse and interdisciplinary

perspectives in archaeology, ethnography, history, geography, and palaeo-environmental studies, readings and discussion will explore the co-production of social and environmental systems over time. (Same as ANTH 6033)

**ENDY689V Special Problems in Environmental Dynamics (Sp, Su, Fa) (1-6)** Independent study of a topic related to environmental dynamics under the guidance of an ENDY faculty member. May be repeated for up to 6 hours of degree credit.

**ENDY6991 Environmental Dynamics Colloquium (Sp, Fa)** Weekly meetings for discussion of current research in environmental dynamics. Graduate students must register for colloquium each semester. Colloquium credit does not count towards minimum hours required for the doctorate. Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**ENDY700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Graduate standing. May be repeated for up to 18 hours of degree credit.

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### English (ENGL)

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**ENGL0003 Basic Writing (Sp, Su, Fa)** A required course for first-time entering freshmen with ACT English scores lower than 19 or SAT verbal scores lower than 470. These students must successfully complete the course prior to enrolling in ENGL 1013, but other students may wish to take it as a review. Upon the recommendation of the Department of English, students may possibly be exempted from this course and transferred to ENGL 1013 as the result of further testing during the first week of classes. Credit earned in this course may not be applied to the total required for a degree.

**ENGL0013 Reading Strategies for College Students (Sp, Su, Fa)** The course focuses on developing reading and learning skills and strategies essential for college success with frequent application to college textbooks in a variety of disciplines. University credit is earned, but the course does not count toward a degree. Required of students not meeting U of A reading placement standards.

**ENGL1013 Composition I (Sp, Su, Fa)** Required of all freshmen unless exempted by the Department of English. Prerequisite is an acceptable score on the English section of the ACT or on another approved test or ENGL 0003. Prerequisite: ENGL 0003 or an acceptable score on the English section of the ACT or another approved test.

**ENGL1013H Honors Composition I (Fa)** A course for freshmen with high placement scores.

**ENGL1023 Composition II (Sp, Su, Fa)** Continuation of ENGL 1013.

**ENGL1023 Technical Composition II (Sp, Su, Fa)** Continuation of ENGL 1013.

**ENGL1023H Honors Composition II (Sp)** Continuation of ENGL 1013H.

**ENGL1213 Introduction to Literature (Fa)** Approaches to reading and writing about fiction, drama, and poetry at the college level.

**ENGL2003 Advanced Composition (Sp, Su, Fa)** Review course in English composition. Required of all candidates for bachelor's degree unless exempted by examination or by credit in ENGL 2013 or by a grade of at least a "B" in ENGL 1013 and a grade of "A" in ENGL 1023 at the University of Arkansas, Fayetteville. Not to be taken before the second semester of the sophomore year; must be taken prior to the last semester before graduation. Cannot be counted toward a major in English. Prerequisite: ENGL 1013 and ENGL 1023.

**ENGL2013 Essay Writing (Sp, Su)** Prerequisite: ENGL 1013 and ENGL 1023.

**ENGL2023 Creative Writing I (Sp, Fa)** Beginning level workshop course in which students write original poems and stories. Reading and detailed discussion of poems and stories in anthologies is required. Designed to teach the student the fundamental techniques of fiction and poetry. Prerequisite: ENGL 1013 and ENGL 1023.

**ENGL2173 Literacy in America (Odd years, Fa)** A course that examines the myriad definitions of literacy (and illiteracy) and their connections to issues of social class, occupational status, economic and political structures, educational institutions, cultural organizations, and the media.

**ENGL2303 Survey of English Literature from the Beginning through the 17th Century (Sp, Fa)** A critical and historical survey of the development of literature in the British Isles from its beginnings to the end of the seventeenth century. Prerequisite: ENGL 1013 and ENGL 1023.

**ENGL2313 Survey of English Literature from 1700 to 1900 (Sp, Fa)** A critical and historical survey of the development of literature in the British Isles from 1700 to 1900. Prerequisites: ENGL 1013 and ENGL 1023.

**ENGL2323 Survey of Modern British, Irish, and Postcolonial Literature (Sp, Fa)** A survey of modern literature in English written in Great Britain, Ireland, Africa, Asia and the Caribbean. Prerequisite: ENGL 1013 and ENGL 1023.

**ENGL2343 Survey of American Literature from the Colonial Period through Naturalism (Sp, Fa)** A survey of major American writers from the colonial period to 1900. Prerequisites: ENGL 1013 and ENGL 1023.

**ENGL2353 Survey of Modern American Literature (Sp, Fa)** A survey of American writers after 1900. Prerequisites: ENGL 1013 and ENGL 1023.

**ENGL3013 Creative Writing II (Sp, Fa)** Laboratory course for students who wish to attempt original work in the various literary forms. Prerequisite: ENGL 2023 or equivalent.

**ENGL3053 Technical and Report Writing (Sp, Fa)** Intensive practice in such types of writing as processes, descriptions of mechanism, abstracts, and laboratory and research reports. The criteria for effective written exposition in the scientific areas, including agriculture and engineering. Prerequisite: ENGL 1013 and ENGL 1023 or equivalent.

**ENGL3113 Folklore (Irregular)** Popular literature (ballads, folktales, etc.). Prerequisite: Junior standing.

**ENGL3123 Folk and Popular Music Traditions (Irregular)** Introduction to folk and popular music studies. Emphasis on American traditions.

**ENGL3143 Language and Expressive Culture (Irregular)** This course explores the complex interrelationship of language, culture, and social identity. Verbal art and expressive culture are examined from a variety of anthropological perspectives. Topics include ethnographies of speaking, discourse analysis, cultural performances, and the performative aspects of oral expression. (Same as ANTH 3143.COMM 3143)

**ENGL3173 Introduction to Linguistics (Irregular)** Introduction to language study with stress upon modern linguistic theory and analysis. Data drawn from various languages reveal linguistic universals as well as phonological, syntactic, and semantic systems of individual languages. Related topics: language history, dialectology, language and its relation to culture and society, the history of linguistic scholarship. Prerequisite: Junior standing. (Same as ANTH 3173.COMM 3173.WLLC 3173)

**ENGL3193 History of the English Language (Fa)** Introduction to the English language and its vocabulary from Anglo-Saxon times to the present.

**ENGL3203 Poetry (Sp, Fa)** A critical introduction to the genre.

**ENGL3213 Fiction (Sp, Fa)** A critical introduction to the genre.

**ENGL3223 Drama (Sp)** A critical introduction to the genre.

**ENGL3283 Topics in Popular Culture and Popular Genres (Irregular)** Survey of a broad topical area in popular culture and popular genres, such as science fiction or detective fiction. Content varies. May be repeated for up to 9 hours of degree credit.

**ENGL3333 British Short Story (Irregular)** Survey of the British short story in the nineteenth and twentieth centuries, with emphasis on the major writers.

**ENGL3433 Introduction to Chaucer (Irregular)** Course designed primarily for undergraduates. Extensive reading in Chaucer's major works.

**ENGL3623 The Bible as Literature (Irregular)** The several translations of the Bible; its qualities as great literature; its influence upon literature in English; types of literary forms. (Same as WLIT 3623)

**ENGL3713 Topics in Medieval Literature and Culture (Irregular)** Study of the languages, literature and civilization of the British Isles from approximately 500-1500 CE (including Old English, Middle English, Celtic, Anglo-Norman and Scandinavian). Content varies. May be repeated for up to 9 hours of degree credit.

**ENGL3723 Topics in Renaissance Literature and Culture (Irregular)** The study of literary works of the English Renaissance, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Course content varies. May be repeated for up to 9 hours of degree credit.

**ENGL3733 Topics in Restoration and Eighteenth-Century Literature (Irregular)** The study of Restoration and eighteenth-century literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. May be repeated for up to 9 hours of degree credit.

**ENGL3743 Topics in 19th-Century British Literature and Culture (Irregular)** The study of literature of the 19th century, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Course content varies. May be repeated for up to 9 hours of degree credit.

**ENGL3753 Topics in Modern British Literature (Irregular)** This course focuses on the literature and culture of a specific period of time within the twentieth century, or on more broadly conceived topics that might organize the century as a whole. Content varies. May be repeated for up to 9 hours of degree credit.

**ENGL3763 Topics in Postcolonial Literature and Culture (Irregular)** Survey of a broad topical area related to postcolonial literature and culture. Content varies. May be repeated for up to 9 hours of degree credit.

**ENGL3833 Topics in American Literature and Culture to 1900 (Irregular)** The study of American literature and culture to 1900, with attention to particular themes, genres, authors, or other organizing principles. Content varies. May be repeated for up to 9 hours of degree credit.

**ENGL3843 Topics in Modern American Literature and Culture (Irregular)** The study of a special topic in the field of modern American literature and culture. Content varies. May be repeated for up to 9 hours of degree credit.

**ENGL3853 Topics in African-American Literature and Culture (Irregular)** The study of works of African-American literature, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. May be repeated for up to 9 hours of degree credit.

**ENGL3863 Topics in Literature and Culture of the American South (Irregular)** The study of works of literature of the American South, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. Content varies. May be repeated for up to 9 hours of degree credit.

**ENGL3903 Special Topics (Irregular)** Survey of a broad topical area related to literature and culture but not otherwise encompassed by the curriculum. Content varies. May be repeated for up to 9 hours of degree credit.

**ENGL3923H Honors Colloquium (Irregular)** Covers a special topic or issue. Offered as part of the honors program. Prerequisite: honor candidacy (not restricted to candidacy in English).

**ENGL399VH Honors Course (Irregular) (1-6)** Prerequisite: junior standing. May be repeated for up to 12 hours of degree credit.

**ENGL4003 English Language and Composition for Teachers (Fa)** Subject matter and methods of approach for the teaching of composition in high school.

**ENGL4013 Undergraduate Poetry Workshop (Irregular)** Gives close attention to individual manuscripts in a workshop environment. Prerequisite: ENGL 3013 or equivalent.

**ENGL4023 Undergraduate Fiction Workshop (Irregular)** Gives close attention to individual manuscripts in a workshop environment. Prerequisite: ENGL 3013 or equivalent.

**ENGL4073 Film Writing Workshop (Irregular)** A workshop in writing the screenplay with close attention given to student manuscripts and adaptations. Prerequisite: Advanced standing.

**ENGL4113 Undergraduate Independent Study (Irregular)** Undergraduate original research and writing. Prerequisite: 'B' average and two-thirds (21 hours or regular requirements for English major completed). May be repeated for up to 3 hours of degree credit.

**ENGL4143 American Film Survey (Irregular)** A survey of major American genres, major directors, and films that have influenced the development of motion pictures. (Same as COMM 4143)

**ENGL4213 Senior Research Seminar (Irregular)** Seminar on a topic in literature in English with a substantial research paper required. May be repeated for up to 3 hours of degree credit.

**ENGL4303 Introduction to Shakespeare (Sp, Su, Fa)** Extensive reading in Shakespeare's comedies, histories, tragedies, and nondramatic poetry.

**ENGL4503 Introduction to Literary Theory (Irregular)** A historical survey of literary theory from Plato onwards.

**ENGL4513 Studies in Literary Criticism and Theory (Irregular)** A survey of contemporary trends in literary criticism. Emphasis will be placed on engaging the practices of a particular theory. Content varies. May be repeated for up to 9 hours of degree credit.

**ENGL4533 Studies in Literature and Gender (Irregular)** The study of a special topic involving literature and gender. Content varies. May be repeated for up to 9 hours of degree credit.

**ENGL4543 Studies in Literature and Multiculturalism (Irregular)** The study of literature and multiculturalism, with attention to particular themes, genres, authors, literary movements, historical moments, or other organizing principles. At least one major paper will be required. Content varies. May be repeated for up to 9 hours of degree credit.

**ENGL4563 Topics in Major Authors (Irregular)** The concentrated study of works by one or more major authors. At least one major paper will be required. Content varies. May be repeated for up to 9 hours of degree credit.

**ENGL4573 Studies in Major Literary Movements (Irregular)** This course focuses on the literature either of a major literary movement such as Romanticism or Modernism, or of a more specific topic such as Utopianism in twentieth-century writing. Content varies. May be repeated for up to 9 hours of degree credit.

**ENGL4603 Special Studies (Irregular)** Concentrated study of a specific topical area related to literature and culture but not otherwise encompassed by the curriculum. Content varies. May be repeated for up to 3 hours of degree credit.

**ENGL4603H Honors Special Studies (Irregular)** Concentrated study of a specific topical area related to literature and culture but not otherwise encompassed by the curriculum. Content varies. May be repeated for up to 3 hours of degree credit.

**ENGL498V Senior Thesis (Irregular) (1-6)**

**ENGL5003 Composition Pedagogy (Fa)** Introduction to teaching college composition. Designed for graduate assistants at the University of Arkansas.

**ENGL5013 Creative Writing Workshop (Irregular)****ENGL5023 Writing Workshop: Fiction (Irregular)****ENGL5033 Writing Workshop: Poetry (Irregular)**

**ENGL5043 Translation Workshop (Irregular)** Problems of translation and the role of the translator as both scholar and creative writer; involves primarily the discussion in workshop of the translations of poetry, drama, and fiction done by the students, some emphasis upon comparative studies of existing translations of well-known works. Primary material will vary. Prerequisite: reading knowledge of a foreign language. (Same as WLLC 504V) May be repeated for up to 15 hours of degree credit.

**ENGL507V Creative Non-Fiction Workshop (Irregular)**

**(1-3)** The theory and practice of the "New Journalism" with a study of its antecedents and special attention to the use of "fictional" techniques and narrator point of view to make more vivid the account of real people and real events.

**ENGL5083 Professing Literature (Irregular)** An introduction to the profession of literary scholarship and the teaching of literature at the college level.

**ENGL510V Readings in English and American Literature (Irregular) (1-6)**

Open to Honors candidates and graduate students.

**ENGL5173 Studies in Medieval Literature and Culture (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL5183 The Structure of Present English (Sp)** Structural analysis of the language.

**ENGL5203 Introduction to Graduate Studies (Irregular)**

Students learn to carry out and report on literary research. Practical assignments introduce them to the reference collections, professional journals, and microform texts with which scholars work. Meanwhile, advanced explication and composition exercises work on perfecting the students' control over the design and style of the articles they write.

**ENGL5223 Studies in Renaissance Literature and Culture (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL5233 Form and Theory of Translation (Irregular)** An examination of the principal challenges that confront translators of literature, including the recreation of style, dialect, ambiguities, and formal poetry; vertical translation; translation where multiple manuscripts exist; and the question of how literal a translation should be.

**ENGL5243 Special Topics (Irregular)** Designed to cover subject matter not offered in other courses.

**ENGL5263 Form and Theory of Fiction: I (Irregular)** Such aspects of the genre as scene, transition, character, and conflict. Discussion is limited to the novel.

**ENGL5273 Form and Theory of Poetry: I (Irregular)** An examination of perception, diction, form, irony, resolution, and the critical theories of the major writers on poetry, such as Dryden, Coleridge, and Arnold.

**ENGL5283 Form and Theory of Fiction: II (Irregular)** Second part of the study of the techniques of fiction. Discussion is limited to the short story. Prerequisite: ENGL 5263.

**ENGL5293 Form and Theory of Poetry: II (Irregular)** Second part of the study of the techniques of poetry; independent study of a poet or a problem in writing or criticism of poetry. Prerequisite: ENGL 5273.

**ENGL5303 Seminar in Restoration and Eighteenth-Century British Literature and Culture (Irregular)** Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL5313 Introduction to Literary Theory (Irregular)** An advanced introductory survey of a number of theoretical approaches to literature.

**ENGL5403 Studies in Nineteenth-Century British Literature and Culture (Irregular)** Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL5603 World Literature and Culture in English (Irregular)** Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL5623 The Bible as Literature (Irregular)** The several translations of the Bible; its qualities as great literature; its influence upon literature in English; types of literary forms. (Same as WLIT 5623)

**ENGL5633 English Drama from Its Beginning to 1642 (Irregular)** Early forms, Tudor drama, Shakespeare's contemporaries, and Stuart drama to the closing of the theatres.

**ENGL5653 Shakespeare: Plays and Poems (Irregular)**

**ENGL569V Seminar in Film Studies (Irregular) (1-9)**

Research, discussion; papers on a variety of film genres and areas including the new American film, the science-fiction film, directors, film comedy, the experimental film, criticism, the film musical. (Same as COMM 569V) May be repeated for up to 9 hours of degree credit.

**ENGL5703 Studies in American Literature and Culture Before 1900 (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL5723 Studies in Literature and Culture of the American South (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL5803 Studies in Twentieth-Century American Literature and Culture (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL5903 Studies in Twentieth-Century British Literature and Culture (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL5923 Film and Media Studies (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL5933 Studies in Popular Culture and Popular Genres (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL5943 Studies in Criticism and Literary Theory (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL5953 Studies in Literary History (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL5973 Studies in Rhetoric and Composition (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL6113 Seminar in Medieval Literature and Culture (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL6203 Seminar in Renaissance Literature and Culture (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL6243 Seminar in Special Topics (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL6443 Seminar in Nineteenth-Century British Literature and Culture (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL6513 Seminar in Twentieth-Century British Literature and Culture (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL6613 Seminar in World Literature and Culture in English (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL6713 Seminar in Restoration and Eighteenth-Century British Literature and Culture (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL6723 Seminar in American Literature and Culture Before 1900 (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL6733 Seminar in Literature and Culture of the American South (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL6803 Seminar in Twentieth-Century American Literature and Culture (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL6933 Seminar in Popular Culture and Popular Genres (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL6943 Seminar in Literary Theory (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL6953 Seminar in Literary History (Irregular)** Subject matter changes depending on student interest and faculty expertise.

May be repeated for up to 12 hours of degree credit.

**ENGL6973 Seminar in Rhetoric and Composition (Irregular)**

Subject matter changes depending on student interest and faculty expertise. May be repeated for up to 12 hours of degree credit.

**ENGL698V Master's Thesis (Sp, Su, Fa) (1-6)****ENGL699V Master of Fine Arts Thesis (Sp, Su, Fa) (1-6)****ENGL700V Doctoral Dissertation (Sp, Su, Fa) (1-18)****Environmental Science (ENSC)****ENSC1001L Environmental Science Laboratory (Fa)**

Laboratory, field trip, and discussion sessions covering the concepts and information allowing students to critically evaluate environmental issues. Topics will include: laboratory safety, recycling, composting, geographic information systems, soil testing, water quality, hazardous wastes, waste disposal, wetlands, wastewater treatment, and sustainable food systems. Laboratory 2 hours/week. Prerequisite or Corequisite: ENSC 1003.

**ENSC1003 Environmental Science (Fa)** Series of lectures and discussions introducing the topic of environmental science including factors related to water, soil, and air quality. May not be taken for natural science credit by students in Fulbright College.

**ENSC3003 Introduction to Water Science (Fa)** Properties, occurrence, and description of the types, functions, quality and quantity, potential contaminants, uses, and guiding policies and regulations of the various water resources in the environment. Prerequisite: ENGL 1023 and ENSC 1003 or CHEM 1053 or higher or GEOL 1113 or higher or BIOL 1543.

**ENSC3103 Plants and Environmental Restoration (Odd years, Fa)** Selection, establishment, and use of plants to promote soil stabilization, water quality, and wildlife habitat. Principles and practices of managing plants for soil remediation, nutrient and sediment trapping, and restoration of plant communities. Prerequisite: CSES 1203 or HORT 2003 or BIOL 1613.

**ENSC3221L Ecosystems Assessment Laboratory (Even years, Fa)** The purpose of this laboratory is to complement concepts learned in lecture by carrying out experiments that familiarize students with methods used in soil and aquatic ecology. Students will collect samples, analyze and interpret data obtained from soil and water samples. Lab will meet once per week for 3 hours. Corequisite: ENSC 3223.

**ENSC3223 Ecosystems Assessment (Even years, Fa)** Application of ecological principles for ESWS majors and college students interested in environmental science. Applications of the basic ecological principles of organisms, populations, communities, and ecosystems to gain an appreciation for how large scale patterns in terrestrial and aquatic ecosystems are influenced by small scale interactions among individuals (microorganisms to invertebrate macrofauna) and between individuals and their local environment. Lecture 3 hours per week. Corequisite: ENSC 3221L. Prerequisite: BIOL 1543, CSES 2203, and ENSC 3003.

**ENSC3263 Environmental Soil and Water Conservation (Sp)** Effect of land use on water quality. Major sources of agricultural nonpoint pollutants. Best management practices used to minimize water quality impacts. Corequisite: Lab component. Prerequisite: CSES 2203.

**ENSC3413 Principles of Environmental Economics (Sp)** An introductory, issues-oriented course in the economics of the environment. What is involved in society making decisions about environmental quality will be studied. Environmental issues important to the State of Arkansas and the United States will be emphasized. Prerequisite: AGECE 1103 or ECON 2023. (Same as AGECE 3413)

**ENSC3603 GIS for Environmental Science (Odd Years, Sp)** Provide instruction on the uses of GIS techniques in solving practical environmental and agricultural land use problems. Areas include: 1) an introduction to spatial variability in soils with an emphasis on the application of GIS techniques to map and understand spatial parameters important to different land uses, and 2) development of individual experience in the use of GIS in solving environmental and agricultural problems using an oral and written term project. Prerequisite: CSES 2203.

**ENSC3933 Environmental Ethics (Odd years, Sp)** The course addresses ethical questions about nature and the natural environment. Topics of discussion include anthropocentric and biocentric ethics, population control, obligations to future generations, animal rights, moral considerability, Leopold's land ethic, deep ecology, and ecofeminism. Lecture/discussions 3 hours per week. Prerequisite: ENSC 1003 or PHIL 2003 or PHIL 2103.

**ENSC400V Special Problems (Sp, Su, Fa) (1-3)** Work on special problems in environmental science or related fields. May be repeated for up to 8 hours of degree credit.

**ENSC4023 Water Quality (Fa)** Physical, chemical, and biological characteristics of natural waters (rain, river, lake, soil, ground, etc.). Discussion of water quality parameters such as pH, alkalinity and acidity, redox, hardness, BOD, TSS, etc. Aquatic processes of

pollutants and principles of modeling. Laboratory experiments in water sampling, measurement of water quality parameters, and instrumentation. Corequisite: Lab component. Prerequisite: CHEM 1123 and CHEM 1121L.

**ENSC4034 Analysis of Environmental Contaminants (Even years, Sp)** Methods of analysis for inorganic and organic contaminants, radionuclides and microorganisms in soil and water. Quality assurance and quality control, sampling protocols, sample handling, instrumentation and data analysis. Lecture 2 hours and laboratory 4 hours per week. Co-Prerequisite: Lab component. Prerequisite: CSES 2203 and ENSC 3003.

**ENSC404V Special Topics (Irregular) (1-3)** Studies of selected topics in environmental sciences not available in other courses. May be repeated for up to 12 hours of degree credit.

**ENSC4263 Environmental Soil Science (Even years, Sp)** Study of the behavior of pesticides, toxic organic compounds, metals, nutrients, and pathogenic microorganisms in the soil/plant/water continuum. Lecture 3 hours per week. Prerequisite: CSES 3214.

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### Entomology (ENTO)

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**ENTO1023 Insects and People (Sp)** Appreciation of the insects and their roles in nature and in civilization for students not required to take ENTO 3013. Biological, historical, social economic, cultural, and medical aspects of insects are discussed. Emphasizes appreciation of entomology and employs many visual aids. Lecture 3 hours per week.

**ENTO1031L Field and Laboratory Studies in Entomology (Sp)** A systematic survey and identification of insects and other arthropods occurring in woodland, aquatic and agricultural environments with emphasis on identification and observation of insects in their natural settings. Laboratory 2 hours per week. Corequisite: ENTO 1023.

**ENTO3013 Introduction to Entomology (Fa)** Fundamentals of structure, function, biology and identification of insects; typical procedures in control of representative species. Insect collection required. Lecture 2 hours, laboratory 2 hours a week. Suggested prerequisites: BIOL 1543 and BIOL 1541L. Corequisite: Lab component.

**ENTO400V Special Problems (Sp, Su, Fa) (1-4)**  
**ENTO4013 Insect Behavior and Chemical Ecology (Even years, Sp)** Basic concepts in insect senses and patterns of behavioral responses to various environmental stimuli. Previous knowledge of basic entomology is helpful, but not required. Lecture 2 hours, laboratory/discussion 2 hours per week. Corequisite: Lab component  
**ENTO4024 Insect Diversity and Taxonomy (Even years, Fa)** Principles and practices of insect classification and identification with emphasis on adult insects. Corequisite: Lab component. Prerequisite: ENTO 3013.

**ENTO4043 Apiculture (Odd years, Sp)** Review of social behavior of insects and its exemplification in Honeybees. Previous knowledge of basic entomology is helpful but not required. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component.

**ENTO4053 Insect Ecology (Even years, Fa)** To develop understanding of important ecological concepts through study of dynamic relationships among insects and their environment. To become familiar with the literature of insect ecology, and interpretation and critique of ecological research. Previous knowledge of basic entomology and/or ecology will be assumed. Corequisite: Lab component.  
**ENTO410V Special Topics (Irregular) (1-3)** Special Topics course available to both undergraduate and graduate students, to address emerging issues and timely topics. This would supplement our graduate-only special topics course.

**ENTO4123 Insect Pest Management (Odd years, Sp)** Study of principles and concept of insect pest management. Areas covered include survey of arthropod pests and damage, population dynamics, damage thresholds, physiological units, prediction models, surveillance, arthropod sampling, strategies and tactics utilized to maintain pest populations below economic injury levels. Prerequisite: ENTO 3013.

**ENTO4133 Advanced Applied Entomology (Even years, Sp)** Biology and ecology of major arthropod pests as model applied management systems. Activities include independent study, literature review and group discussions. Knowledge of general entomology and pest management is required. Self-learning modules are available. Lecture 2 hours/week and direct self study laboratory 2 hours/week. Corequisite: Lab component. Prerequisite: ENTO 3013.

**ENTO462V Internship (Irregular) (3-6)** Supervised practical work experience in pest management to develop and demonstrate professional competence. A maximum of 6 hours credit per semester or summer session is permitted. Faculty approval of projects proposal prior to enrollment, and written or oral reports are required.  
**ENTO500V Special Problems (Sp, Su, Fa) (1-4)** Prerequisite: graduate standing. May be repeated for up to 4 hours of degree credit.

**ENTO5013 Morphology of Insects (Odd years, Fa)** Origin, evolution, and functional significance of external insect structure.

Structure and function of major internal systems. Previous knowledge of basic entomology is helpful, but not required. Lecture 2 hours, laboratory 4 hours per week. Corequisite: Lab component.

**ENTO511V Special Topics (Irregular) (1-4)** Topics not covered in other courses or a more intensive study of specific topics in entomology. Prerequisite: graduate standing.

**ENTO5123 Biological Control (Even years, Fa)** Theoretical and practical basis for biological control of arthropod pests and weeds via parasites, predators, and pathogens. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component.

**ENTO5133 Applied Molecular Genetics (Even years, Sp)** A hands on course in applied molecular genetic techniques used in agricultural research including molecular diagnostics and population genetics. Students will learn how to apply advanced molecular genetic methodologies and Internet database resources to the organism that they are using for their graduate research. Prerequisite: ANSC 3123.

**ENTO600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: graduate standing.

**ENTO6071 Seminar (Sp, Fa)** Fall: special topics not covered in regular course work. Spring: critical review of research papers in entomology. Seminar will be taken by graduate student majors for both semesters. May be repeated for up to 6 hours of degree credit.

**ENTO6113 Insect Physiology (Even years, Sp)** General and comparative physiology of insects. Previous knowledge of basic entomology is helpful, but not required. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component.

**ENTO6213 Insect Toxicology (Odd years, Fa)** Toxicology of chemicals to insects and humans including techniques of testing collecting data, and factors that influence reactions to different classes of insecticides. Previous knowledge of organic physiological chemistry is helpful, but not required. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component.

**ENTO700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: graduate standing.

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### Educ Stats & Research Methods (ESRM)

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**ESRM5013 Research Methods in Education (Sp, Su, Fa)** General orientation course which considers the nature of research problems in education and the techniques used by investigators in solving those problems. Prerequisite: graduate standing.

**ESRM5393 Statistics in Education and Health Professions (Sp, Su, Fa)** Applied statistics course for Master's degree candidates. Includes concepts and operations for frequency distributions, graphing techniques, measures of central tendency and variation, sampling, hypothesis testing, and interpretation of statistical results.

**ESRM5653 Educational Assessment (Irregular)** Introduction to measurement issues and basic test theory. Focus on types and usage of assessment tools, data management, and analysis and interpretation of educational data. Practical training in the utilization and interpretation of academic achievement data in Arkansas.

**ESRM600V Master's Thesis (Sp, Su, Fa) (1-6)** May be repeated for up to 6 hours of degree credit.

**ESRM605V Independent Study (Sp, Su, Fa) (1-6)**

**ESRM6403 Educational Statistics and Data Processing (Sp, Su, Fa)** Theory and application of frequency distributions, graphical methods, central tendency, variability, simple regression and correlation indexes, chi-square, sampling, and parameter estimation, and hypothesis testing. Use of the computer for the organization, reduction, and analysis of data (required of doctoral candidates). Prerequisite: ESRM 5013 or equivalent.

**ESRM6413 Experimental Design in Education (Sp)** Principles of experimental design as applied to educational situations. Special emphasis on analysis of variance techniques used in educational research. Prerequisite: ESRM 6403 or equivalent.

**ESRM6423 Multiple Regression Techniques for Education (Fa)** Introduction to multiple regression procedures for analyzing data as applied in educational settings, including multicollinearity, dummy variables, analysis of covariance, curvilinear regression, and path analysis. Prerequisite: ESRM 6403.

**ESRM6453 Applied Multivariate Statistics (Sp)** Multivariate statistical procedures as applied to educational research settings including discriminant analysis, principal components analysis, factor analysis, canonical correlation, and cluster analysis. Emphasis on use of existing computer statistical packages. Prerequisite: ESRM 6413.

**ESRM6513 Advanced Experimental Design (Irregular)** Advanced topics of the general linear model, including hierarchical linear modeling and longitudinal analysis with a focus on developing the mathematical and theoretical basis for these methods. Prerequisite: ESRM 6413.

**ESRM6523 Advanced Multiple Regression (Irregular)** Advanced topics of correlational research methods, including logistic regression and path analysis with a focus on developing the mathematical and theoretical basis for these advanced methodologi-

cal designs. Prerequisite: ESRM 6423.

**ESRM6533 Qualitative Research (Sp, Fa)** Introduction of non-quantitative methods, including data collection through interviews, field observation, records research, internal and external validity problems in qualitative research. Prerequisite: ESRM 6403.

**ESRM6543 Advanced Qualitative Research (Sp)** Preparation for the conduct of qualitative research, structuring, literature reviews, data collection and analysis, and reporting results. Prerequisite: ESRM 6533. May be repeated for up to 6 hours of degree credit.

**ESRM6553 Advanced Multivariate Statistics (Irregular)** Builds on the foundation provided in Multivariate and introduces techniques that extend methodological elements of canonical, discriminant, factor analytic, and longitudinal analyses, providing the mathematical and theoretical foundations necessary for these designs. Prerequisite: ESRM 6453.

**ESRM6613 Evaluation of Policies, Programs, and Projects (Fa)** Introduction to evaluation in social science research, including why and how evaluations of programs, projects, and policies are conducted; includes analysis of actual evaluations in a variety of disciplines. Prerequisite: ESRM 6403. (Same as EDRE 6213)

**ESRM6623 Techniques of Research in Education (Sp, Su)** Use of scientific method in attacking educational problems. Emphasis placed on the planning and design of research studies, collection of reliable and valid data, sampling methods, and analysis and interpretation of data. Prerequisite: ESRM 6403.

**ESRM6653 Measurement and Evaluation (Irregular)** Fundamentals of measurement: scales, scores, norms, reliability, validity. Test and scale construction and item analysis. Standardized measures and program evaluation models in decision making. Prerequisite: ESRM 6403.

**ESRM668V Practicum in Research (Irregular) (1-6)** Practical experience in educational research on campus, in school systems, or in other agencies in educational program development.

**ESRM699V Seminar (Irregular) (1-6)** Prerequisite: advanced graduate standing. May be repeated for up to 6 hours of degree credit.

**ESRM700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Candidacy.

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### Educational Technologies (ETEC)

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**ETEC2001 Educational Technology (Sp, Su, Fa)** A criterion-based course designed to provide beginning technology users with conceptual knowledge and skills in the area of fundamental computer technology and traditional educational media. Grades are determined by total points earned on successful completion of identified course projects, unit quizzes, and a proficiency final examination. Corequisite: ETEC 2002L

**ETEC2002L Educational Technology Lab (Sp, Su, Fa)** Computer lab exercises and projects appropriate to Educational Technology. Student enrolling in ETEC 2002L must also enroll in ETEC 2001. Corequisite: ETEC 2001

**ETEC5062 Teaching and Learning with Computer-based Technologies (Su)** Provides students admitted to the Master of Arts in Teaching (M.A.T.) program with the information and experience needed to use computer-based teaching technologies to meet instructional objectives in content area classrooms. Prerequisite: ETEC 2003.

**ETEC5183 Internet in the K-12 Classroom (Irregular)** This course prepares teachers to be informed consumers of Internet technology; plan appropriate and effective Internet activities for their learners; and understand their responsibilities regarding electronic media, communications, and the Internet in the classroom. Prerequisite: Graduate standing.

**ETEC5213 Introduction to Educational Media (Sp, Su, Fa)** Instruction in selecting, utilizing and evaluating instructional materials and equipment. Prerequisite: Graduate standing.

**ETEC5243 Instructional Design Theory & Models (Fa)** A study of the instructional development process as it pertains to the design and production of instructional materials which use modern technologies. Goal analysis, objectives, evaluation, instructional strategy development, production of an educational product, and revision of the instructional materials are considered. Prerequisite: Graduate standing.

**ETEC5253 Information Technologies (Irregular)** Students perform intensive examinations of the role of new technologies and their implications for instructional practice. Emphasis is on identification and evaluation of new technologies in instructional environments. Establishing and maintaining learning environments, exploring selected theories and concepts, assessing potential uses of IT, and utilization of new technologies will occur.

**ETEC5263 Grant Writing in Instructional Technology (Sp, Su, Fa)** Students will have an opportunity to find grant funding sources, write a grant, and submit an actual grant proposal to an agency for consideration. Will survey research in instructional media over the past 60 years and learn specific criteria for reading and

evaluating research reports and articles. Will investigate current issues and topics related to research and grant writing in instructional media.

**ETEC5283 Field Experiences in Educational Technology (Sp, Su, Fa)** Field experience in educational technology settings. Prerequisite: Graduate standing and 6 hours of graduate work in educational technology.

**ETEC5303 Learning with Computers in K-12 Classrooms (Irregular)** Students learn how technology can be used to support K-12 classroom environments. Various learning theories and technologies will be explored and projects will be developed that utilize technologies and current learning theories in K-12 settings. Emphasis is on identification, evaluation, and the effective use of technologies to support classroom environments. Prerequisite: Graduate standing.

**ETEC5313 Principles in Visual Literacy (Irregular)** Students gain understanding of visual literacy research and learn to create graphics that support learning. Literature in the area of visual literacy and learning theories as well as tools that facilitate effective visual literacy will be used to create visuals that are clear, communicate well, and help enhance learner performance.

**ETEC5363 Distance Learning (Irregular)** This course covers important aspects of the distance learning, course design and teaching. The course will link theory to practice by investigating theory and examining research that undergrads practice, examining and analyzing current practice, proposing practice standards, and discussing issues related to learners in distance education environments. May be repeated for up to 3 hours of degree credit.

**ETEC5373 Web Design (Irregular)** Students design, create, and analyze Web sites by applying processes, standards and techniques used to identify target audience; ensure compliance with copyright and disability laws, measure effectiveness, and coordinate Web design. Topics include copyright and fair use, user and task analysis, usability, accessibility, testing, search engine optimization, and web analytics. May be repeated for up to 3 hours of degree credit.

**ETEC5743 Internship (Sp, Su, Fa)** A supervised field placement in educational technology that provides experience consistent with the student's professional goals and training emphasis. Internship experiences are planning and directed under the guidance of a faculty member. On-campus and on-site supervision is required. Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**ETEC5993 Seminar (Sp, Su, Fa)** This course is designed to enhance the established educational technology curriculum by providing students with special topic content and classroom experiences under the guidance of a faculty member. Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**ETEC600V Master's Thesis (Sp, Su, Fa) (1-6)**

**ETEC6053 Special Problems in Educational Technology (Sp, Su, Fa)** Individually designed and conducted studies of educational technology under the guidance of a faculty member. Negotiated learning contract with supervising faculty required before enrollment. On-campus supervision required. Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**ETEC6223 Strategic Planning and IDT Programs (Sp, Su, Fa)** The course offers readings and experiences intended to develop strategic planning knowledge, values, attitudes, and skills in future instructional design and technology leaders. Topics covered include strategic planning and leadership.

**ETEC6393 Issues and Trends in Instructional Design and Technology (Irregular)** Critical challenges posed as a result of the increasing infusion of technology into the school and training environments are explored. The course prepares students to make and defend policy decisions and become conversant with current trends and issues in the field. Prerequisite: ETEC 5213.

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### European Studies (EUST)

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**EUST2013 Introduction to Europe (Fa)** This course will cover the basic physical and human geography of Europe, emphasizing the factors that tie Europe together as well as the diversity of environmental and cultural conditions in the region. The class will focus particularly on those countries that are current members of the EU and on possible future entrants.

**EUST399VH Honors Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Junior standing. May be repeated for up to 6 hours of degree credit.

**EUST4003 European Studies Colloquium (Sp)** An interdepartmental colloquium with an annual change in subject of investigation, required of students in the European studies program. Prerequisite: Sophomore standing. May be repeated for up to 6 hours of degree credit.

**EUST4003H Honors European Studies Colloquium (Sp)** May be repeated for up to 3 hours of degree credit.

**EUST470V Special Topics (Irregular) (1-6)** An examination of pertinent issues in Europe.

**EUST470VH Honors Special Topics (Irregular) (1-6)** An examination of pertinent issues in Europe.

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### Extension Education (EXED)

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**EXED3023 An Introduction to the Cooperative Extension Service (Irregular)** Development of the Extension Service as a part of the Land-Grant College system; organization, personnel and functions of the Extension Service in agriculture and human environmental sciences. Prerequisite: Junior standing.

**EXED4173 Principles of Extension Teaching (Irregular)** An understanding of the principles of teaching and learning, selection, and use of teaching methods and materials with emphasis on the role of extension as a part of the community education system. Prerequisite: EXED 3023 and PSYC 2003.

**EXED4183 Management of Volunteer Programs (Irregular)** Recruiting, training, management, evaluation, and recognition of volunteers in agricultural-related agencies, non-profit organizations, community groups, and advisory committees. Prerequisite: Junior standing.

**EXED475V Internship in Extension (Sp, Su, Fa) (3-6)** A supervised practical work experience in Cooperative Extension which is designed to give the student an insight into the role of Extension employees and an opportunity to gain professional competence in this area. Prerequisite: Junior standing and EXED 3023. May be repeated for up to 6 hours of degree credit.

**EXED5113 Program Development and Evaluation (Irregular)** Principles and proceedings of program development process including planning, designing, implementing, and evaluating of extension education programs. An emphasis on the framework for applying adult and non-formal education principles to the change process. Prerequisite: EXED 3023.

**EXED5133 Extension Organization and Administration (Irregular)** Program and personnel administration for planning and management of county extension programs. Emphasis will be given to organization, structures, principles, and theories of administration, personnel management, training and evaluation. Prerequisite: Graduate standing.

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### Food Science (FDSC)

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**FDSC1011 Food Science Orientation (Fa)** Introduces food science as a unique program offering exciting career opportunities. This course emphasizes the importance of science in processing and preservation of food and discusses current topics and issues. Provides sound, basic information on food constituents, additives, labeling, environmental issues, food regulations, and food safety. Lecture 2 hours per week for 8 weeks.

**FDSC1103 Introduction to Food Science (Sp)** This course is designed to provide students with a general application and understanding of current issues associated with food products and food ingredients. Discussions will focus on controversial subjects involving food products, food additives, food safety and preservation techniques based on scientific principles and popular belief. Lecture/discussions/demonstrations, 3 hours per week.

**FDSC2503 Food Safety and Sanitation (Fa)** Principles of sanitation, cleaners and sanitizers, sanitary equipment and plant design, and microbial growth and control in food processing operations. Lecture/discussion/demonstrations, 3 hours per week.

**FDSC2523 Sanitation and Safety in Food Processing Operations (Even years, Sp)** Topics to be covered include understanding and control of microbial, chemical, and physical food hazards as well as emerging food safety issues. Course will include a study of cleaners and sanitizers and sanitary equipment and plant designs. Bioterrorism and food safety will also be discussed. (On-line course)

**FDSC3103 Principles of Food Processing (Even years, Fa)** The course is designed as an overview of the unit; food processing operations common to all types of food processing plants. Examples will be drawn from international food processing operations processing fruits and vegetables, poultry and meats, and oil seeds and cereal grains. Emphasis on oral communication and critical thinking skills. Corequisite: Lab component. Prerequisite: CHEM 1123 and CHEM 1121L.

**FDSC3202 Introduction to Food Law (Even years, Sp)** Discussion of government laws and regulations affecting the manufacture of food. Emphasis is on federal regulations relating to food safety, labeling, and the FDA. Discussion relates to practical use of food law. Lecture 2 hours per week.

**FDSC3303 Principles of Food Processing (Even years, Fa)** This web-based introductory course is designed as an overview of unit food processing operations common to all types of food processing plants. Examples will be drawn from national and international food processing operations processing: fruits, vegetables, poultry and meats, oil seeds and cereal grains. Emphasis is on student learning principles of food processing operations and includes strengthening students' written communications and critical thinking skills. Corequisite: lab component.

**FDSC3753 Introduction to Food Engineering Principles**

**(Sp)** Web-based course designed to give students a perspective of how engineering principles are used in food processing. The student will be introduced to the application of food engineering principles to real-world food processing situations. Students will develop an understanding of the basics of units systems, mass balances, fluid rheology, fluid flow, heat transfer, and thermal processing. Prerequisite: MATH 1285 or equivalent and/or consent of instructor.

**FDSC400V Special Problems (Sp, Su, Fa) (1-4)** Investigation of assigned problems in food science. Prerequisite: Junior standing.

**FDSC4114 Food Analysis (Even years, Sp)** Methods of analysis, instrumentation, and laboratory techniques for measuring the chemical composition of raw and value-added products. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: CHEM 1123 and CHEM 1121L and CHEM 2613 and CHEM 2611L or (CHEM 3603 and CHEM 3601L).

**FDSC4124 Food Microbiology (Sp)** Microbiology, contamination, preservation, and spoilage of different kinds of foods, food poisoning, sanitation, control, and inspection; microbiology of water; and standard methods for official food and public health laboratories. Lecture 2 hours, laboratory 4 hours per week. Corequisite: Lab component. Prerequisite: BIOL 2013 and BIOL 2011L and CHEM 1123 and CHEM 1121L. (Same as BIOL 4124)

**FDSC4203 Quality Evaluation and Control (Even years, Fa)** Definition of grades and standards of quality by chemical, physical, and sensory techniques. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: CHEM 1123 and CHEM 1121L.

**FDSC4304 Food Chemistry (Fa)** Water, carbohydrates, lipids, proteins, vitamins, and minerals in foods; biochemical and functional properties, enzymes, food additives (emulsifiers, pigments, colors, flavors, preservatives, and sweeteners) and texture as related to properties in food systems and during processing. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: CHEM 1123 and CHEM 1121L and CHEM 2613 and CHEM 2611L or (CHEM 3603 and CHEM 3601L).

**FDSC431V Internship in Food Science (Sp, Su, Fa) (1-4)** The Food Science Internship is a supervised practical work experience with a food industry, research program or governmental agency to gain professional experience and insight into career opportunities. A maximum of 4 hours credit is allowed for degree credit. Prerequisite: Junior standing and consent. For graduate credit, completion of first year of graduate studies and consent of major professor.

**FDSC4413 Sensory Evaluation of Food (Odd years, Fa)** Principles and procedures for sensory evaluation of food. Appropriate uses of specific tests are discussed, along with physiological, psychological, and environmental factors affecting sensory verdicts. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: STAT 2303 or WCOB 1033 or AGST 4023 or STAT 2023 or PSYC 2013.

**FDSC4713 Food Product and Process Development (Odd years, Sp)** Multidisciplinary approaches for developing new food products and processes; in the context of an industry-sponsored project. Group dynamics and interpersonal skills. Factors that influence product and process development. Analysis and modeling applied to food process design. Lecture 2 hours and laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: Junior standing, Food Science majors only or consent.

**FDSC4754 Engineering Principles of Food Processing (Odd years, Sp)** Basic mechanics of refrigeration, temperature controls, materials handling and mechanical problems as applied to foods and food processing. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: MATH 1213, PHYS 2013, and PHYS 2011L.

**FDSC4823 Principles of Food Microbiology (Fa)** This web-based course is a study of the fundamentals of food microbiology to include its history, classifications, spores and their importance, and the most common and serious pathogenic food microorganisms. Fermentation, spoilage microorganisms and control methodology are also discussed.

**FDSC5001 Seminar (Sp, Fa)** Presentation and discussion of graduate student research. Prerequisite: Graduate standing.

**FDSC509V Special Problems Research (Sp, Su, Fa) (1-4)** Original investigation on assigned problems in food science. Prerequisite: Graduate standing.

**FDSC5503 Safety and Sanitation for the Food Industry (Sp)** This web-based course will provide an appreciation of the need for sanitation in food processing and increase the students' knowledge of sanitary techniques. Topics will include contamination sources, plant and equipment design, cleaners and sanitizers, HACCP, and food biosecurity. Also covered will be considerations in selecting, establishing and maintaining a sanitation program. Prerequisites: General Microbiology or Food Microbiology; General Chemistry.

**FDSC5703 Fermented Foods (Odd years, Fa)** Examination of factors influencing the fermentation of food and beverage, and methods to control the microbiological stability and quality of these products. Lecture/discussion 3 hours per week. Prerequisite: CHEM

3813 and FDSC 4124.

**FDSC600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**FDSC602V Special Topics (Irregular) (1-3)** Discussions focused on selected topics of particular fields of raw product physiology and food processing. chemistry, physiology, microbiology, evaluation, sensory analysis and preservation. Prerequisite: Graduate standing.

**FDSC6033 Food Biochemistry (Even years, Sp)** Biochemical characteristics, functions, regulation and impact of components in raw and processed foods of plant origin. Lecture/discussion 3 hours per week. Prerequisite: CHEM 3813.

**FDSC6123 Food Carbohydrate Chemistry (Odd years, Sp)** Focus is on carbohydrate chemistry including molecular structures and physical properties, production and food applications, analytical methods for food carbohydrates, and interactions among food polysaccharides. Prerequisite: FDSC 4304.

**FDSC6133 Food Lipid Chemistry (Even years, Fa)** Chemistry and technology of commercial fats and oils in food systems with discussion of lipid changes affecting food quality and human health. Prerequisite: FDSC 4304 and FDSC 4114.

**FDSC6323 Nutraceuticals and Functional Foods (Even years, Sp)** Course will include past, present and future of nutraceuticals and functional foods, chemistry, mechanism, novel technologies, nutrigenomics, processing, healthy lifestyle, regulation, safety, marketing, international aspects, and industry project. Prerequisite: CHEM 2613 (or CHEM 3603 and CHEM 3813 and FDSC 4304 or instructor consent).

**FDSC6333 Food Protein Chemistry and Functionality (Odd years, Fa)** This course is a study in advanced food protein chemistry, including molecular structures, characterization, physicochemical bases of food protein functionality, structure-function relationship, processing technologies to improve functionality, as well as hands-on experiences with timely, practical projects related to food proteins. Lecture and problem solving projects for 3 hours per week. Pre- or corequisite: FDSC 4304.

**FDSC700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** The doctoral program in food science is an interdepartmental program offered by the departments of Food Science, Animal and Poultry Sciences, and Human Environmental Sciences. Prerequisite: Graduate standing.

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### Fulbright Institute Intl Relat (FIIR)

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**FIIR2813 Introduction to International Relations (Sp, Fa)** Introduction to the international system, theories of international behavior, political economy, conflict and peacemaking, the third world, international law and organizations, and the nature of the post-Cold War world. (Same as PLSC 2813)

**FIIR4003 International Relations Seminar (Fa)** The capstone course in international relations involves intensive study of major global trends and issues. Students choose a research project culminating in a senior thesis to meet the College writing requirement. Prerequisite: FIIR 2813 or PLSC 2813.

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### Finance (FINN)

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**FINN1003 Your Money and Credit (Sp, Su, Fa)** Introduction to personal finance. Topics include building wealth, do's and don'ts of credit, car and home ownership. Lectures on theory and concepts; 'learning from the masters' video on best practices; financial simulations and case exercises. Non-degree credit for business majors.

**FINN3003 Personal Financial Management (Sp, Fa)** Topics covered include budgeting, financial planning, managing credit, taxes, insurance, investments, and retirement planning.

**FINN3013 Financial Analysis (Sp, Su, Fa)** Focuses on how information contained in financial statements can be used in financial decision-making; in particular, to assess financial performance, evaluate credit and default risk, forecast future funds needs, weigh the risk-reward of debt vs. equity financing, and develop estimates of intrinsic value using relative valuation metrics and discounted cash flow methods. Prerequisite: WCOB 2043

**FINN3053 Financial Markets and Institutions (Sp, Su, Fa)** Role and operations of financial markets and institutions in the economy. Supply of, demand for, funds, interest rates and flow of funds analysis. Financial policies, practices of bank and nonbank financial institutions. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143.

**FINN3063 Investments (Sp, Su, Fa)** Introduction to basic investment concepts including: risk-return and mean-variance efficient frontiers, diversification and the pricing of risk, security valuation. Prerequisite: WCOB 2043 and FINN 3013.

**FINN3103 Financial Modeling (Sp, Su, Fa)** Develop strong computer skills in financial analysis by integrating conceptual material with spreadsheet-based numerical solution and simulation techniques. Prerequisite: WCOB 2043.

**FINN3133 Commercial Banking (Sp, Fa)** Commercial bank

administration, management; loans; bond portfolios; credit analysis; public relations; analysis and interpretations of Federal Reserve regulations and publications. Prerequisite: WCOB 2043.

**FINN3603 Corporate Finance (Sp, Su, Fa)** Develop analytical competencies in financial planning, cost of capital estimation, application of discounted cash flow approach to valuation and capital allocation, lease analysis, evaluation of merger and organizational restructuring strategies. Prerequisite: WCOB 2043 and FINN 3013.

**FINN3623 Risk Management (Sp, Fa)** A survey of the extent and types of risk in business; ways of dealing with business risk; use of security and commodity exchanges; survey of insurance for risk bearing purposes.

**FINN3703 International Finance (Sp, Su, Fa)** Introduction to international financial markets, exchange rates and exchange rate determination, balance of trade measures, and vehicles for foreign trade financing.

**FINN3933 Real Estate Principles (Sp, Su, Fa)** Comprehensive, covering economics of real estate, real estate value, real estate finance, rights in real property and their transfer, public programs, policies relating to real property.

**FINN4003H Honors Finance Colloquium (Irregular)** Explores important concepts, significant events and/or new developments in the field of Finance. Prerequisite: Senior standing.

**FINN4013 Seminar in Personal Financial Planning (Sp)** Explores financial planning function, including contact, data acquisition, plan development and implementation; covers all areas of personal financial planning including investments, insurance, taxes, and estate planning; addresses planning techniques and financial planning ethical issues; emphasis on case studies. Pre- or Corequisite: FINN 4733. Prerequisite: FINN 3003, FINN 3063, FINN 3623, and ACCT 3843.

**FINN410V Special Topics in Finance (Irregular) (1-6)** Explore current events, new developments and special topics in Finance not covered in other courses. Prerequisite: FINN 3013. May be repeated for up to 6 hours of degree credit.

**FINN4133 Advanced Investments (Sp, Fa)** Sound training in the principles of security analysis and portfolio management and certain advanced techniques of financial management. Modern portfolio theory and its application to portfolio management practices will be emphasized. Prerequisite: FINN 3063.

**FINN4143 Portfolio Management I (Fa)** This course applies modern investment theory to the practical management of the Rebsament Trust. Students prepare a statement of investment objectives, recommend an asset allocation strategy based on a quantitative analysis of asset class returns, and select securities using fundamental analysis. Classes are organized as management meetings and visits to investment firms are an important part of the class. Selection is by invitation. Prerequisite: ACCT 3723 and FINN 3063 and by invitation only.

**FINN4153 Portfolio Management II (Sp)** This course is a continuation of FINN 4143. Topics covered include technical analysis, dynamic asset allocation and derivative strategies. Visits to major investments firms and organized exchanges in New York City or other locations are generally planned. Selection is by invitation. Prerequisite: FINN 4143.

**FINN4163 Fixed Income Securities I (Fa)** The markets and institutional settings of fixed income securities; valuation and risk analysis of money market and capital market instruments; strategies and management of bond portfolios; taxable and tax-exempt securities; U.S. and non-U.S. fixed income securities; term structure of interest rate; and interest rate derivatives as hedging tools. Prerequisite: FINN 3013 and FINN 3063.

**FINN4173 Fixed Income Securities II (Sp)** Continuation of FINN 4163. The markets and institutional settings of fixed income securities; valuation, and risk analysis of money market and capital market instruments; strategies and management of bond portfolios; taxable and tax-exempt securities; U.S. and non-U.S. fixed income securities; term structure of interest rate; and interest rate derivatives as hedging tools. Prerequisite: FINN 4163.

**FINN4233 Advanced Corporate Finance (Irregular)** Addresses complex and multifaceted issues and problems in financial decision-making. Prerequisite: FINN 3063.

**FINN4313 Advanced Commercial Banking (Sp)** Problems and cases emphasizing application of analytical tools and techniques in decision making process. Determination of operating policies regarding loans, investments, liquidity, capital; efficient performance of lending, investment function; profit planning, analysis; strategies of growth, competition; and evaluation of bank performance. Prerequisite: FINN 3133.

**FINN4413 Real Estate Investment and Appraisal (Fa)** Investment analysis and valuation theory applied to real estate. Prerequisite: FINN 3933.

**FINN4433 Real Estate Finance (Sp)** Consideration of professional aspects of real estate, brokerage, property management, finance, appraisal, property development, current problems and developments relating to real property. Prerequisite: FINN 3933.

**FINN450V Independent Study (Irregular) (1-3)** Permits

students on an individual basis to explore selected topics in finance, with the consent of instructor.

**FINN4733 Life and Health Insurance I (Fa)** Basic principles, functions, uses of life and health insurance; types of policy contracts; calculation of premiums, reserves; organizations, management, supervision, of companies.

**FINN4833 Property and Casualty Insurance I (Sp)** Forms and functions of fire, marine, inland marine, automobile title, miscellaneous types insurance and bonds for business, personal use.

**FINN5223 Financial Markets & Valuation (Sp)** Analysis of financial information by capital markets in the determination of security values with specific applications to retail and logistics companies. This course views these and other companies from the point of view of the capital markets.

**FINN5303 Advanced Corporate Financial Management (Irregular)** Focus on financial policy issues using real situational cases. Topics include cost of capital, capital budgeting and long-term planning, value-based management, real options, as well as project financing and valuation. Prerequisite: MBAD 511V.

**FINN5333 Investment Theory and Management (Fa)** Integration of theory, practice of investments with solution of individual and institutional portfolio management problems; Institute of Chartered Financial Analysts' Problems; variable annuity in estate planning. Prerequisite: FINN 5223.

**FINN5413 Shollmier Investment Project (Irregular)** Provide students with the opportunity to design and apply complex investment strategies used in institutional portfolio management on the Shollmier MBA Fund that can involve fixed income and equity securities as well as derivatives. Students will use top down asset allocation models, bottom up security selection, and hedge fund strategies. Prerequisites: FINN 5223 and FINN 5333.

**FINN5443 Retail Finance (Fa)** The financial success of retail product and service offerings depends on a clear understanding of the socio-economic as well as demographic and environmental factors that drive the changing patterns of consumption. This course introduces the fundamentals and use of consumer and trade area analysis tools, specifically geographic information systems (GIS) and psychographic market analysis, to make informed financial decisions. Extensive case studies are utilized throughout the course to learn concepts and best practices. Prerequisite: FINN 5223

**FINN5703 Multinational Business Finance (Irregular)** Problems pertinent to managers of firms in multinational business environments, including international institutions, risks, investments and capital budgeting. Prerequisite: FINN 5203.

**FINN6043 Finance Theory (Irregular)** Provides a conceptual understanding of key theoretical developments in the field of financial economics, including firm decisions under risk within a world of uncertainty.

**FINN6133 Seminar in Investment Theory (Sp)** Study advanced literature in field investments, with special reference to theory of random walks, stock valuation models, portfolio management.

**FINN636V Special Problems in Finance (Irregular) (1-6)** Case studies in investments, corporation finance, money and banking, monetary theory, international finance, public finance. By arrangement. May be repeated for up to 6 hours of degree credit.

**FINN6733 Seminar in Financial Markets and Institutions (Irregular)** Recent developments in the literature of financial markets and institutions. Participants will be involved in the extensive study of existing theories and empirical tests of the theories.

**FINN683V Contemporary Issues in Doctoral Colloquium (Sp, Su, Fa) (1-3)** To explore and evaluate contemporary research issues in finance. Course content to reflect the most recent developments in theory and empirical research methodologies. Prerequisite: Doctoral student status and instructor consent. May be repeated for up to 18 hours of degree credit.

**FINN700V Doctoral Dissertation (Sp, Fa) (1-18)** Prerequisite: Candidacy.

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### French (FREN)

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**FREN1003 Elementary French I (Sp, Fa)**

**FREN1013 Elementary French II (Sp, Fa)** Elementary courses stress correct pronunciation, aural comprehension, and simple speaking ability, and lead to active mastery of basic grammar and limited reading ability.

**FREN2003 Intermediate French I (Sp, Fa)** Intermediate courses lead to greater facility in spoken language and to more advanced reading skills.

**FREN2013 Intermediate French II (Sp, Fa)** Continued development of basic speaking comprehension and writing skills and intensive development of reading skills.

**FREN2013H Honors Intermediate French II (Sp, Fa)**

**FREN3003 Advanced French (Sp, Su, Fa)** Further intensive practice for the purpose of strengthening written and oral expression. Includes a review of the essentials of French grammar. Prerequisite: FREN 2013 or equivalent.

**FREN3033 French Conversation (Fa)** Three hours per week of guided conversation practice for the post-intermediate student. Prerequisite: FREN 2013.

**FREN3063 Ph.D. Reading Requirement I (Su)**

**FREN3103 Cultural Readings (Sp, Su, Fa)** A course designed to build vocabulary and to strengthen reading skills and oral expression through extensive practice with culturally authentic materials. Prerequisite: FREN 2013.

**FREN3113 Introduction to Literature (Sp, Su, Fa)** Further development of reading skills and introduction to literacy commentary and analysis. Prerequisite: FREN 3003 or FREN 3103.

**FREN399VH Honors French Course (Sp, Fa) (1-6)** Prerequisite: Junior standing. May be repeated for up to 12 hours of degree credit.

**FREN4003 French Grammar and Composition (Fa)** Prerequisite: FREN 3003 or FREN 3103.

**FREN4033 French for Oral Proficiency (Sp)** Three hours per week of conversation practice for the advanced undergraduate. Prerequisite: FREN 3003 or FREN 3103.

**FREN4113 Special Themes in French Literature (Irregular)** Topics not normally covered in period courses. Sample topics: "The Comic Tradition in French Literature," "French Cinema." Topics announced one semester in advance. Prerequisite: FREN 3113. May be repeated for up to 3 hours of degree credit.

**FREN4203H Honors Quebec Studies (Irregular)** A study of Quebec's culture, institutions, economy, literature and cinema. Prerequisite: FREN 3113.

**FREN4213 French Civilization (Sp)** Prerequisite: FREN 3113.

**FREN4223 A Survey of French Literature I (Su)** A survey of French literature, its forms and themes from the medieval period through the 18th century. Prerequisite: FREN 3113.

**FREN4233 A Survey of French Literature II (Sp, Su, Fa)** A survey of French literature, its forms and themes in the 19th and 20th centuries. Prerequisite: FREN 3113.

**FREN4333 Business French (Fa)** Introduction and orientation to the French world of business and commerce through the study of vocabulary, forms, and formulas and expression used in commercial correspondence. Prerequisite: FREN 3113.

**FREN475V Special Investigations (Sp, Fa) (1-6)**

**FREN5003 French Grammar and Phonetics (Irregular)** Systematic review of principles of French grammar and syntax; Comprehensive presentation of French phonetics.

**FREN5033 Advanced French Conversation (Irregular)** This course will provide small discussion environment in which graduate students will improve their command of spoken French in an interactive setting. Discussion will concentrate on current cultural issues in the French speaking world.

**FREN5213 French Culture & Civilization (Irregular)** An analysis of French cultural symbols and attitudes as observed in their historical economical, political, social, educational, and linguistic aspects.

**FREN5333 Old French Literature (Irregular)** An intensive study of French Medieval Literature from the Chansons de Geste to Vilon, including an in-depth analysis of the genres and their evolution, and of the major authors of the times.

**FREN5353 Survey of French Poetry (Irregular)** A comprehensive study of French poetry from the Middle Ages to the twentieth century, focusing on close readings of individual poems. This course will cover literary movements and trends of the periods the terminology required to do explication de texte.

**FREN5433 French 16th Century Literature (Irregular)** A survey of representative writers of the sixteenth century.

**FREN5543 French 17th Century Literature (Irregular)** A survey of representative writers of the seventeenth century.

**FREN5663 French Short Story (Irregular)** An introduction to the French short story, focusing on close readings of a variety of contes and nouvelles from the Middle Ages through the twenty-first century.

**FREN5673 French 18th Century Literature (Irregular)**

**FREN5703 Special Topics (Irregular)** May be offered in a subject not specifically covered by the courses otherwise listed. May be repeated for up to 6 hours of degree credit.

**FREN575V Special Investigations (Irregular) (1-6)**

**FREN5773 Survey of Francophone Literature (Irregular)** A survey of representative texts in the field of sub-Saharan and North African literature concentrating on postcolonial novels using contemporary critical approaches.

**FREN5783 The French Nineteenth Century Novel (Irregular)**

**FREN5813 French 20th Century Theatre (Irregular)**

**FREN5833 French 20th Century Novel (Irregular)**

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**Geography (GEOG)**

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**GEOG1123 Human Geography (Sp, Su, Fa)** Basic course in human geography stressing the interrelationships between the

natural factors of the environment and man's activities, especially the role of geography in the understanding of social problems and economic and political activities.

**GEOG2003 World Regional Geography (Sp, Fa)** Survey of problems, development potential, and physical and human resources of the developing and developed world.

**GEOG3003 Conservation of Natural Resources (Sp, Su, Fa)** Theory and growth of conservation and the wise use of the major natural resources of the United States. This course meets the requirement in conservation for teachers. Prerequisite: Junior standing.

**GEOG3003H Honors Conservation of Natural Resources (Sp, Su, Fa)** Theory and growth of conservation and the wise use of the major natural resources of the United States. This course meets the requirement in conservation for teachers. Prerequisite: junior standing.

**GEOG3033 Building Materials field Studies and Laboratory (Even Years, Sp)** Study of durable building materials, their availability, strength, deterioration, limitation and utility. Historic construction techniques, identification of architectural materials, architectural elements assessment, causes and mechanisms of deterioration, conservation and treatment of architectural materials, preservation philosophies and standards and creation of a practical field identification kit will also be covered.

**GEOG3333 Oceanography (Even years, Sp)** The sea, its landforms; its winds and currents as related to the atmosphere, world climates, and world trade; its basin as avenues for continental drift; its waters as habitat for plant and animal life; its marine and submarine resources as presently and potentially useful to man. Offered as physical science. Prerequisite: Junior standing.

**GEOG3343 Natural Regions of North America (Irregular)** Introduces students to the characteristics of the natural environments of North America. The soils, landforms, climate, hydrology, and flora and fauna of the principal natural regions of the United States, Canada, and Central America are examined.

**GEOG3353 Economic Geography of NAFTA (Irregular)** Systematic study of the geographical distribution of economic activities in the countries of the North American Free Trade Agreement. Prerequisite: Junior standing.

**GEOG3383 Principles of Landscape Evolution (Fa)** Examines the role of waves, rivers, wind, and tectonics in shaping and modifying the surface of the earth. Considers the way in which an understanding of landscape processes is essential to the effective solution of environmental problems. Lecture 3 hours. May be repeated for up to 3 hours of degree credit.

**GEOG3923H Honors Colloquium (Irregular)** Covers a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in geography).

**GEOG399VH Honors Course (Irregular) (1-6)** Prerequisite: Junior standing. May be repeated for up to 12 hours of degree credit.

**GEOG4033 Geography of the Middle East (Irregular)** Physical and cultural landscapes, natural and cultural resources, art and architecture, land use, political history, OPEC, and current problems of North Africa and the Middle East region west of Afghanistan are discussed. Class participation, discussions, slides and films, and student presentations will round out the class. Prerequisite: Junior standing.

**GEOG4033H Honors Geography of the Middle East (Irregular)** Physical and cultural landscapes, natural and cultural resources, art and architecture, land use, political history, OPEC, and current problems of North Africa and the Middle East region west of Afghanistan are discussed. Class participation, discussions, slides and films, and student presentations will round out the class. Prerequisite: Junior standing.

**GEOG4063 Urban Geography (Sp)** Areal patterns of modern urban regions and the focus shaping these patterns. Emphasis is placed on American urban areas and their evolution and functional areas. Field work. Prerequisite: Junior standing.

**GEOG410V Special Problems in Geography (Fa) (1-6)** Designed to meet the needs of students who wish to study one particular geographic topic in some detail. Prerequisite: Junior standing. May be repeated for up to 6 hours of degree credit.

**GEOG410VH Honors Special Problems in Geography (Fa) (1-6)** Designed to meet the needs of students who wish to study one particular geographic topic in some detail. Prerequisite: junior standing. May be repeated for up to 6 hours of degree credit.

**GEOG4243 Political Geography (Odd years, Fa)** Contemporary world political problems in their geographic context. Development of the principles of political geography with emphasis upon the problems of Eastern Europe, Africa, and Southeast Asia. Prerequisite: Junior standing.

**GEOG430V Internship in Physical Geography (Sp, Su, Fa) (3-6)** Supervised experience in municipal, county, state or private natural resource management agency, or any other such organization approved by instructor.

**GEOG4353 Elements of Weather (Fa)** Examination of the atmospheric processes that result in multifarious weather systems.

Offered as physical science. Prerequisite: Junior standing.

**GEOG4363 Climatology (Sp)** Fundamentals of topical climatology followed by a study of regional climatology. Offered as physical science. Prerequisite: GEOG 1003 and/or GEOG 4353.

**GEOG4383 Hazard & Disaster Assessment, Mitigation, Risk & Policy (Sp)** Comprehensive introduction to interdisciplinary approaches to natural and environmental hazards and risk. Hazards and disaster assessment, mitigation, and policy are the focus of the class. Prerequisite: Junior standing or above. May be repeated for up to 3 hours of degree credit.

**GEOG4383H Honors Hazard & Disaster Assessment, Mitigation, Risk & Policy (Sp)** Comprehensive introduction to interdisciplinary approaches to natural and environmental hazards and risk. Hazards and disaster assessment, mitigation, and policy are the focus of the class. Prerequisite: Junior standing or above.

**GEOG4783 Geography of Europe (Irregular)** Geographic regions of the area with emphasis on their present development. Prerequisite: Junior standing.

**GEOG5003 Seminar in Geography (Irregular)** Selected topics, the nature of which varies with the need. Prerequisite: Graduate standing. May be repeated for up to 3 hours of degree credit.

**GEOG5011 Colloquium (Sp)** Weekly meetings of faculty, graduates, advanced students and guests to discuss research and trends in the field of geography. May be repeated for up to 2 hours of degree credit.

**GEOG5093 History of Geography (Even years, Sp)** Chronological development of the science; leaders in the field of geography; and the evolution of the major concepts of geography. Prerequisite: Graduate standing.

**GEOG510V Special Problems in Physical Geography (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**GEOG5113 Global Change (Fa)** Examines central issues of global change including natural and human induced climate change, air pollution, deforestation, desertification, wetland loss urbanization, and the biodiversity crisis. The U.S. Global Change Research Program is also examined. (Same as ENDY 5113)

**GEOG520V Special Problems in Human Geography (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**GEOG530V Special Problems in Regional Geography (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**GEOG5313 Planetary Atmospheres (Irregular)** Origins of planetary atmospheres, structures of atmospheres, climate evolution, dynamics of atmospheres, levels in the atmosphere, the upper atmosphere, escape of atmospheres, comparative planetology of atmospheres.

**GEOG5333 Research Methods and Materials in Geography (Odd years, Fa)** Geographical research and the preparation of research papers. Prerequisite: Graduate standing.

**GEOG600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

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**Geology (GEOL)**

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**GEOL1111M Honors General Geology Laboratory (Fa)** Survey of geological processes and products and their relationships to landforms, natural resources, living environments, and human beings. Lecture 3 hours, laboratory 2 hours per week. Corequisite: GEOL 1113H.

**GEOL1111L General Geology Laboratory (Sp, Su, Fa)** Laboratory exercises concerning the identification of rocks and minerals, use of aerial photographs and topographic maps, and several field trips. Pre- or Corequisite: GEOL 1113.

**GEOL1113 General Geology (Sp, Su, Fa)** Survey of geological processes and products, and their relationships to landforms, natural resources, living environments and human beings. Lecture 3 hours per week. GEOL 1111L is recommended as a corequisite.

**GEOL1113H Honors General Geology (Irregular)** Survey of geological processes and products and their relationships to landforms, natural resources, living environments, and human beings. Lecture 3 hours, laboratory 2 hours per week. Corequisites: GEOL 1111M.

**GEOL1131L Environmental Geology Laboratory (Sp)** Laboratory exercises concerning human interactions with the physical environment including the study of earthquakes, volcanoes, flooding, erosion, mass wasting, water supply and contamination, and waste disposal. Prerequisite: (GEOL 1113 and GEOL 1111L) or (GEOG 1003 and GEOG 1001L).

**GEOL1133 Environmental Geology (Sp)** The application of geologic principles and knowledge of problems created by human occupancy and exploitation of the physical environment. Prerequisite: (GEOL 1113 and GEOL 1111L) or (GEOG 1003 and GEOG 1001L).

**GEOL2313 Minerals & Rocks (Fa)** General principles of mineralogy and petrology, study and identification of common minerals,

igneous & metamorphic rocks using hand samples. Prerequisite: GEOL 1113.

**GEOL3002 Geology for Engineers (Fa)** Geologic principles involved in construction, reservoir location, etc. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component.

**GEOL3032 Geology of Arkansas (Sp)** A survey of the distribution, genesis, and age of the rocks, fossils, structures, landforms and geological processes of Arkansas. Equivalent to two hours of lecture per week. Field trips required. Prerequisite: GEOL 1113 or GEOL 1113H.

**GEOL3114 Invertebrate Paleontology (Sp)** Survey of the invertebrate phyla commonly preserved as fossils emphasizing their physical and biological characteristics. Lecture 3 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: GEOL 1133 or (BIOL 1543 and BIOL 1541L) or equivalent.

**GEOL3313 Igneous and Metamorphic Rocks (Sp)** Megascopic study and classification of igneous and metamorphic rocks. Lecture 2 hours, laboratory 2 hours per week. Corequisite: lab component. Prerequisite: GEOL 2313.

**GEOL3413 Sedimentary Rocks & Fossils (Sp)** An introductory study of sedimentary rocks and fossils from the standpoint of classification, field and laboratory description, genesis, and preservation. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: GEOL 2313.

**GEOL3514 Structural Geology (Fa)** Survey of deformational features and their geological significance in the crust of the earth. Lecture 3 hours per week. Corequisite: Lab component. Prerequisite: GEOL 1004 or GEOL 1113 or GEOL 3002.

**GEOL360V Undergraduate Special Problems (Sp, Su, Fa) (1-6)** Library, laboratory, or field research in different phases of geology. May be repeated for up to 6 hours of degree credit.

**GEOL3901 Junior Honors Course (Sp, Su, Fa)** Special honors research in geology. One hour credit each semester. Prerequisite: Junior standing.

**GEOL3911 Junior Honors Course (Sp, Su, Fa)** Special honors research in geology. One hour credit each semester. Prerequisite: Junior standing.

**GEOL3923H Honors Colloquium (Irregular)** Covers a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in geology).

**GEOL4033 Hydrogeology (Sp)** Occurrence, movement, and interaction of water with geologic and cultural features. Lecture 3 hours per week. Corequisite: Lab component. Prerequisite: MATH 2564 and GEOL 3513 and GEOL 3511L.

**GEOL4053 Geomorphology (Sp)** Mechanics of landform development. Lecture 2 hours, laboratory 3 hours per week. Several local field trips are required during the semester. Corequisite: Lab component. Prerequisite: GEOL 1113 or GEOL 3002.

**GEOL4063 Principles of Geochemistry (Fa)** Introduction to fundamental principles of geochemistry from historic development to modern concepts. Corequisite: Lab component. Prerequisite: CHEM 1121 and CHEM 1123.

**GEOL4153 Karst Hydrogeology (Irregular)** Assessment of ground water resources in carbonate rock terrains; relation of ground water and surface water hydrology to karst; quantification of extreme variability in karst environments; data collection rationale. Field trips required. Prerequisite: GEOL 4033.

**GEOL4223 Stratigraphy and Sedimentation (Sp)** Introductory investigation of stratigraphic and sedimentologic factors important to the study of sedimentary rocks. Lecture 2 hours, laboratory 3 hours per week. A required weekend, two-day field trip will be conducted during the semester. Corequisite: Lab component. Prerequisite: GEOL 3413.

**GEOL4253 Petroleum Geology (Fa)** Distribution and origin of petroleum. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: Geology major and senior standing. May be repeated for up to 3 hours of degree credit.

**GEOL436V Geology Field Trip (Sp) (1-2)** Camping field trip to areas of geologic interest, usually conducted during Spring Break. Prerequisite: GEOL 3313. May be repeated for up to 4 hours of degree credit.

**GEOL4433 Geophysics (Irregular)** Derivation from physical principles, of the geophysical methods for mapping the Earth. Computational methods of converting gravity, magnetic, radiometric, electrical, and seismic data into geologic information. Lecture 3 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: MATH 2564 and PHYS 2033 and PHYS 2031L and GEOL 3513 and GEOL 3511L.

**GEOL4443 The Solid Earth: Structure, Composition and Evolution (Irregular)** Modern views for the origin of the solid Earth and its structure, composition, and evolution through geologic time. Topics will include examination of relevant geophysical and geochemical constraints used to develop global models for the Earth. Prerequisites: CHEM 1123, GEOL 3313, MATH 2564, PHYS 2074 or permission of the instructor.

**GEOL4553 Volcanology (Irregular)** A broad introduction to

volcanic processes and their associated hazards. Emphasis will be placed on applying basic physical and chemical principles to understanding volcanic systems. Prerequisite: GEOL 2313.

**GEOL4666 Geology Field Camp (Su)** A professional course taught off campus emphasizing occurrence, description, mapping, and interpretation of major rock types. Prerequisite: GEOL 3413 and GEOL 3514. (may not be taken for graduate credit).

**GEOL481V Cooperative Education Program (Sp, Su, Fa) (1-6)** Credit for off-campus, compensated work experience related to geology arranged through the Cooperative Education Office and Department of Geology.

**GEOL4863 Geological Data Analysis (Sp)** Quantitative methods and techniques for analysis and interpretation of geological data. Prerequisite: MATH 2564, GEOL 3514.

**GEOL4922 Senior Honors Course (Sp, Su, Fa)** Special honors research in geology. Two hours of credit each semester. Prerequisite: Junior honors.

**GEOL4924 Earth System History (Sp)** Physical and biological events that form the history of the earth from its formation to the beginning of the historical era. Graduate enrollment only with departmental permission. Prerequisite: GEOL 3514.

**GEOL4932 Senior Honors Course (Sp, Su, Fa)** Special honors research in geology. Two hours of credit each semester. Prerequisite: Junior honors.

**GEOL5001 Graduate Seminar (Irregular)** Informal discussions of research as reported in geological literature. All graduate students are expected to attend.

**GEOL5063 Geochemistry (Fa)** Chemistry of geologic processes and the geochemical cycles of selected elements. Prerequisite: CHEM 1103 and CHEM 1101L and CHEM 1123 and CHEM 1121L.

**GEOL5076 Advanced Field Methods of Applied Hydrogeology (Su)** Applied field course emphasizing collection and interpretation of ground water data. Three hours may be applied toward an M.S. degree in geology. Prerequisite: GEOL 4033.

**GEOL5123 Stratigraphic Principles and Practice (Irregular)** Physical and biological characteristics of sedimentary environments and their correlation in time with emphasis on the local geologic section. Corequisite: Lab component. Prerequisite: GEOL 4223.

**GEOL5153 Environmental Site Assessment (Irregular)** Principles, problems, and methods related to conducting an environmental site assessment. An applied course covering field site assessment, regulatory documentation, and report preparation. Prerequisite: GEOL 4033. (Same as ENDDY 5153)

**GEOL5163 Hydrogeologic Modeling (Irregular)** Topics include numerical simulation of ground water flow, solute transport, development geochemistry, theoretical development of equations, hypothesis testing of conceptual models, limitations of specific methods, and error analysis. Emphasis on practical applications and problem solving. Prerequisite: GEOL 4033 and computer literacy.

**GEOL5223 Sedimentary Petrology (Fa)** Sediments and sedimentary rocks. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: GEOL 4223.

**GEOL5263 Hydrochemical Methods (Even years, Fa)** Collection, analytical and interpretation techniques and methods for water, including quality control and quality assurance. Prerequisite: CHEM 1123 and CHEM 1121L.

**GEOL5413 Planetary Geology (Irregular)** Exploration of the solar system, geology and stratigraphy, meteorite impacts, planetary surfaces, planetary crusts, basaltic volcanism, planetary interiors, chemical composition of the planets, origin and evolution of the Moon and planets.

**GEOL5443 The Solid Earth (Irregular)** Modern views for the origin of the solid Earth and its structure, composition, and evolution through geologic time. Topics will include examination of relevant geophysical and geochemical constraints used to develop global models for the Earth. Prerequisite: GEOL3313, MATH2564, CHEM1123, PHYS2074 or permission of the instructor.

**GEOL5543 Tectonics (Fa)** Development of ramifications of the plate tectonics theory. Analysis of the evolution of mountain belts. Lecture 3 hours per week. Prerequisite: GEOL 3513 and GEOL 3511L.

**GEOL5553 Volcanology (Irregular)** A broad introduction to volcanic processes and their associated hazards. Emphasis will be placed on applying basic physical and chemical principles to understanding volcanic systems. Prerequisite: GEOL 2313.

**GEOL560V Graduate Special Problems (Sp, Su, Fa) (2-6)** Library, laboratory, or field research in different phases of geology. May be repeated for up to 4 hours of degree credit.

**GEOL600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

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### Geosciences (GEOS)

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**GEOS3023 Introduction to Cartography (Fa)** Students learn basic principles of map design, cartographic theory and field surveying to produce a variety of computer-generated maps. An

introductory course designed for students in a variety of different disciplines using AutoCad software and various new technologies. Field trips may be required.

**GEOS3543 Geographic Information Science (Fa, Sp)** Computer assisted analysis and display of geographic resource data. Course develops the theory behind spatial data analysis techniques, and reinforces the theory with exercises that demonstrate its practical applications. (Same as ANTH 3543)

**GEOS3923H Honors Colloquium (Irregular)** Covers a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in geology or geography).

**GEOS440V Internship in GIS & Cartography (Sp, Su, Fa) (3-6)** Supervised experience in GIS and/or cartographic applications with municipal, county, state, or private enterprises. May be repeated for up to 6 hours of degree credit.

**GEOS4413 Principles of Remote Sensing (Fa)** Fundamental concepts of remote sensing of the environment. Optical, infrared, microwave, LIDAR, and in situ sensor systems are introduced.

Remote sensing of vegetation, water, urban landscapes, soils, minerals, and geomorphology is discussed. The course includes laboratory exercises in geomatics software and both remote and in situ sensor system field trips. Prerequisite: University science course.

**GEOS4523 Computer Mapping (Sp)** This course addresses advanced cartographic concepts (i.e. visual hierarchy, aesthetics, image cognition) and production techniques as they relate to computer-assisted mapping. Students produce a variety of maps using AutoCad and Illustrator software to build a map portfolio. Field trips may be required. Prerequisite: GEOG 3023.

**GEOS4553 Introduction to Raster GIS (Fa)** Theory, data structure, algorithms, and techniques behind raster-based geographical information systems. Through laboratory exercises and lectures multidisciplinary applications are examined in database creation, remotely sensed data handling, elevation models, and resource models using boolean, map algebra, and other methods. Prerequisite: GEOS 3543 or ANTH 3543. (Same as ANTH 4553)

**GEOS4563 Geology of Our National Parks (Fa)** This course examines the underlying geology responsible for selected parks, and explores the interplay of geology, biology, climate, topography, and humans to evaluate the value of the parks, and to anticipate the problems they will face in the near and long-term. Prerequisite: GEOL 1113.

**GEOS4563H Honors Geology of Our National Parks (Fa)** This course examines the underlying geology responsible for selected parks, and explores the interplay of geology, biology, climate, topography, and humans to evaluate the value of the parks, and to anticipate the problems they will face in the near and long-term. Prerequisite: GEOL 1113.

**GEOS4583 Vector GIS (Sp)** Introduction to geographic information systems (GIS) applications in marketing, transportation, real estate, demographics, urban and regional planning, and related areas. Lectures focus on development of principles, paralleled by workstation-based laboratory exercises using mainstream GIS software and relational data bases. Prerequisite: GEOS 3023 or GEOS 3543. (Same as ANTH 4563)

**GEOS4593 Introduction to Global Positioning Systems (Fa)** Fundamentals of navigation, mapping, and high-precision positioning using the Navstar Global Positioning System. Topics include datum definition and transformation, map projections, autonomous and differential positioning using both code and carrier processing, and analysis of errors. Prerequisite: GEOS 3543. (Same as ANTH 4593)

**GEOS4653 Advanced Raster GIS (Odd years, Sp)** Advanced raster topics are examined beginning with a theoretical and methodological review of Tomlin's cartographic modeling principles. Topics vary and include Fourier methods, image processing, kriging, spatial statistics, principal components, fuzzy and regression modeling, and multi-criteria decision models. Several raster GIS programs are examined with links to statistical analysis software. Prerequisite: GEOS 4553 or ANTH 4553.

**GEOS4693 Environmental Justice (Sp)** This course deals with the ethical, environmental, legal, economic, and social implications of society's treatment of the poor, the disenfranchised, and minorities who live in the less desirable, deteriorating neighborhoods, communities, and niches of our country. The class integrates science with philosophy, politics, economics, policy, and law, drawing on award-winning films, current news, and case studies.

**GEOS4693H Honors Environmental Justice (Sp)** This course deals with the ethical, environmental, legal, economic, and social implications of society's treatment of the poor, the disenfranchised, and minorities who live in the less desirable, deteriorating neighborhoods, communities, and niches of our country. The class integrates science with philosophy, politics, economics, policy, and law, drawing on award-winning films, current news, and case studies.

**GEOS4863 Quantitative Techniques in Geosciences (Sp)** An introduction to the application of standard quantitative and spatial



statistical techniques to geoscientific analysis. Students will use both micro and large system computers in the course. Prerequisite: (STAT 4003 and STAT 4001L) or equivalent. (Same as ANTH 4863)

**GEOS5023 Technical and Proposal Writing for the Geosciences (Sp)** Preparation of technical reports, research proposals, and manuscripts for publication in the area of geosciences.

**GEOS5033 Advanced Vector Geographic Information Systems (Irregular)** Advanced vector operations and analysis.

Topics will include topological analysis, network analysis, geocoding, conflation, implications of source and product map scale, map generation, error mapping, and cartographic production. Prerequisite: (ANTH 4563 or GEOS 4583) or equivalent. (Same as ANTH 5043, ENDY 5033)

**GEOS5053 Quaternary Environments (Fa)** An interdisciplinary study of the Quaternary Period, including dating methods, deposits, soils, climates, tectonics, and human adaptation. Lecture 2 hours, laboratory 2 hours per week. Prerequisite: Graduate standing. (Same as ANTH 5053, ENDY 5053)

**GEOS5063 Climate Through Time (Sp)** The earth's climate history over the last 2 million years and the influence various factors have had on it; compilation and paleoclimatic histories and methods of dating climatic effects. Prerequisite: GEOG 4363 or equivalent. (Same as BIOL 5063, ENDY 5063)

**GEOS423 Remote Sensing of Natural Resources (Even years, Sp)** Introductory digital image processing of remotely sensed data. Topics include data collection, laboratory design, scientific visualization, radiometric and geometric correction, enhancement, pattern recognition, artificial intelligence, and accuracy assessment in natural resource remote sensing. Advanced geomatics software exercises and a final project are included. Prerequisite: GEOS 4413 and proficiency in a programming language.

**GEOS5853 Environmental Isotope Geochemistry (Sp)** Introduction to principles of isotope fractionation and distribution in geologic environments, isotopic analytical methods, and extraction of isotope samples; application of isotopes in characterization of geologic processes and interaction with hydrologic, surficial, and biologic attenuation, paleothermometry soil, and biogeochemical processes. Prerequisite: GEOL 5063 or GEOL 5263. (Same as ENDY 5853) May be repeated for up to 3 hours of degree credit.

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### German (GERM)

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**GERM1003 Elementary German I (Sp, Su, Fa)**

**GERM1013 Elementary German II (Sp, Su, Fa)** Elementary courses stress correct pronunciation, aural comprehension, and simple speaking ability, and lead to active mastery of basic grammar and limited reading ability.

**GERM2003 Intermediate German I (Sp, Su, Fa)** Intermediate courses lead to greater facility in spoken language and to more advanced reading skills.

**GERM2013 Intermediate German II (Sp, Su, Fa)** Continued development of basic speaking comprehension and writing skills and intensive development of reading skills.

**GERM2013H Honors Intermediate German II (Sp, Fa)**

**GERM3003 Advanced German I (Fa)** Development of reading, writing, listening, and speaking skills. Some grammar review and translation exercises. Emphasis on vocabulary acquisition and the correct use of idiomatic expressions. Prerequisite: GERM 2013.

**GERM3013 Introduction to Literature (Fa)** Development of reading skills and introduction to literary analysis. Prerequisite: GERM 2013 or equivalent.

**GERM3033 Conversation (Sp)** Three hours per week of guided conversation practice for the post-intermediate student. Prerequisite: GERM 2013.

**GERM3063 Ph.D. Reading Requirement (Su)** (Same as GERM 4003)

**GERM399VH Honors German Course (Sp, Fa) (1-6)** Prerequisite: Junior standing. May be repeated for up to 12 hours of degree credit.

**GERM4003 Advanced German II (Sp)** Further development of reading, writing, listening, and speaking skills. Some grammar review and translation exercises. Emphasis on vocabulary acquisition and the correct use of idiomatic expressions. Prerequisite: GERM 2013. (Same as GERM 3063)

**GERM4033 Advanced Conversation (Sp)** Three hours per week of conversation practice for the advanced undergraduate. Prerequisite: GERM 3033.

**GERM4123 The German Novelle (Irregular)** An intensive study of the novelle as a genre from its origin to the present. Prerequisite: GERM 3013.

**GERM4133 The German Drama (Irregular)** A study of the development of the forms and themes of the German drama from the middle ages to the present. Prerequisite: GERM 3013.

**GERM4133H Honors The German Drama (IR)** A study of the development of the forms and themes of the German drama from the middle ages to the present. Prerequisite: GERM 3013

**GERM4143 German Lyric Poetry (Irregular)** A study of the forms and themes of German lyric poetry from the middle ages to the present. Prerequisite: GERM 3013.

**GERM4213 German Civilization (Irregular)** Prerequisite: GERM 2013 or equivalent.

**GERM4333 Business German I (Fa)** Introduces students to the language of business German and provides insights into business practices in the German-speaking countries. Covers aspects of business geography, the European Union, transportation/shipping, business correspondence, resume writing and job application. Open to all majors; no business prerequisites. Prerequisite: GERM 2013. May be repeated for up to 6 hours of degree credit.

**GERM470V Special Topics (Irregular) (1-3)** May be offered in a topic not specifically covered by courses otherwise listed. May be repeated for up to 6 hours of degree credit.

**GERM475V Special Investigations (Sp, Fa) (1-6)**

**GERM5223 Early German Literature: Middle Ages to the Enlightenment (Sp, Su, Fa)**

**GERM5273 German Literature: Enlightenment, Storm and Stress, and Classicism (Sp, Su, Fa)**

**GERM5343 Early Modern German Literature: Late 19th and Early 20th Century (Sp, Su, Fa)**

**GERM5363 German Literature after 1945 (Sp, Su, Fa)**

**GERM5703 Special Topics (Sp, Su, Fa)** May be offered in a subject not specifically covered by the courses otherwise listed. May be repeated for up to 6 hours of degree credit.

**GERM575V Special Investigations (Sp, Su, Fa) (1-6)**

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### Gerontology (GERO)

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**GERO4443 Gerontology (Sp)** Physiological and psychological development of the aging individual, extended family relations, service networks for the elderly, and retirement activities. Some attention to housing and care needs of persons in advanced years. Lecture 3 hours per week. Seminar. Prerequisite: instructor consent.

**GERO5013 Field Experience in Gerontology (Irregular)** Supervised research/practical experience in field setting. Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**GERO5023 Critical Issues in Aging (Irregular)** Consideration of current issues of aging not covered in depth in other courses. Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

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### General Engineering (GNEG)

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**GNEG1103 Introduction to Engineering (Sp)** This introductory course for undergraduate freshmen students introduces them to the fields of engineering and many of the modeling and problem solving techniques used by engineers. It also introduces the students to the engineering profession and some of the computer tools necessary for pursuing a degree in engineering.

**GNEG1111 Introduction to Engineering I (Fa)** Fundamentals of engineering problem-solving including skills from mathematics, science, and computing. Introduction to the engineering design process through team-based activities. Study of the contemporary engineering profession and the disciplines within the College of Engineering. Prerequisite: General Engineering majors only.

**GNEG1111H Honors Introduction to Engineering I (Fa)** Fundamentals of engineering problem-solving including skills from mathematics, science, and computing. Introduction to the engineering design process through team-based activities. Study of the contemporary engineering profession and the disciplines within the College of Engineering. Prerequisite: General Engineering majors only.

**GNEG1121 Introduction to Engineering II (Sp)** Further study of engineering problem-solving including skills from mathematics, science, and computing. Experience with the engineering design process through a major, team-based project. Selecting a major within the College of Engineering. Discussion of academic and professional opportunities for engineering students. Prerequisite: General Engineering students only. Prerequisite or Corequisite: MATH 2554.

**GNEG1121H Honors Introduction to Engineering II (Sp)** Further study of engineering problem-solving including skills from mathematics, science, and computing. Experience with the engineering design process through a major, team-based project. Selecting a major within the College of Engineering. Discussion of academic and professional opportunities for engineering students. Prerequisite: General Engineering students only. Prerequisite or Corequisite: MATH 2554.

**GNEG1122 Introduction CAD (Sp, Fa)** General course in the use of engineering drawings for communications and design. Proper use of computer for computer-aided drafting and design; 2-dimensional, 3-dimensional, and solid modeling; use of manual drafting equipment; geometrical exercises; orthographic projections; auxiliary view; sketching; dimensioning. Pre- or Corequisite: MATH 1213 or higher. Corequisite: LAB component.

**GNEG1201 Fundamentals of Success in Engineering**

**Study (Sp, Fa)** Assisting Engineering First Year students in developing skills for successful completion of engineering course work. Building a supportive learning community, assisting students in developing positive attitudes and productive behaviors resulting in both academic and personal success, and informing students of the resources available for maintaining their academic and personal wellness. Prerequisite: Consent required.

**GNEG1301H Honors Colloquium (Irregular) (1-2)** Covers a set of special topics or issues relevant to Freshman Engineering students. Offered as part of the honors program. Prerequisite: Honors College students only. Approval required. May be repeated for up to 2 hours of degree credit.

**GNEG3103 Globalization and Innovation (Irregular)** Integration of engineering in the globalized business environment. Innovation and integration models. Global survival skills. International organizational value-chain. Conducting business with emerging nations. Case studies; field trips; guest lectures. Experiential learning design component. Taken by students participating in departmental approved study abroad programs. May not earn credit for GNEG 4103 or 5103.

**GNEG3103H Honors Globalization and Innovation (Irregular)** Integration of engineering in the globalized business environment. Innovation and integration models. Global survival skills. International organizational value-chain. Conducting business with emerging nations. Case studies; field trips; guest lectures. Experiential learning design component. Taken by students participating in departmental approved study abroad programs. May not earn credit for GNEG 4103 or 5103.

**GNEG3801 Internship (Sp, Su, Fa)** Supervised experience in industry where students can learn to apply classroom skills to problems in the real-world environment.

Prerequisite: Instructor permission. May be repeated for up to 2 hours of degree credit.

**GNEG3811 Cooperative Education (Sp, Su, Fa)** Supervised experience in industry where students can learn to apply classroom skills to problems in the real-world environment. Prerequisite: Instructor consent. May be repeated for up to 2 hours of degree credit.

**GNEG390V Special Topics (Irregular) (1-4)** Consideration of current engineering topics not covered in other courses. Prerequisite: Instructor's consent. May be repeated for up to 4 hours of degree credit.

**GNEG390VH Honors Special Topics (Irregular) (1-4)** Consideration of current engineering topics not covered in other courses. Prerequisite: Instructor's consent. May be repeated for up to 4 hours of degree credit.

**GNEG4103 Globalization and Innovation (Irregular)** Integration of engineering in the globalized business environment. Innovation and integration models. Global survival skills. International organizational value-chain. Conducting business with emerging nations. Casestudies; fieldtrips; guest lectures. Experiential learning design component. Taken by students participating in departmental approved study abroad programs. May not earn credit for GNEG 3103 or 5103.

**GNEG4103H Honors Globalization and Innovation (Irregular)** Integration of engineering in the globalized business environment. Innovation and integration models. Global survival skills. International organizational value-chain. Conducting business with emerging nations. Casestudies; fieldtrips; guest lectures. Experiential learning design component. Taken by students participating in departmental approved study abroad programs. May not earn credit for GNEG 3103 or 5103.

**GNEG490V Special Topics (Irregular) (1-4)** Consideration of current engineering topics not covered in other courses. Prerequisite: Instructor's consent. May be repeated for up to 4 hours of degree credit.

**GNEG490VH Honors Special Topics (Irregular) (1-4)** Consideration of current engineering topics not covered in other courses. Prerequisite: Instructor's consent. May be repeated for up to 4 hours of degree credit.

**GNEG5103 Globalization and Innovation (Irregular)** Integration of engineering in the globalized business environment. Innovation and integration models. Global survival skills. International organizational value-chain. Conducting business with emerging nations. Case studies; field trips; guest lectures. Experiential learning design component. Taken by students participating in departmental approved study abroad programs. May not earn credit for GNEG 3103 or 4103.

**GNEG5801 Internship (Sp, Su, Fa)** Supervised experience in industry where students can learn to apply classroom skills to problems in the real-world environment. Prerequisite: Instructor permission. May be repeated for up to 3 hours of degree credit.

**GNEG5811 Cooperative Education (Sp, Su, Fa)** Supervised experience in industry where students can learn to apply classroom skills to problems in the real world environment. Prerequisite: Instructor permission.

**GNEG590V Special Topics (Irregular) (1-4)** Consideration of current engineering topics not covered in other courses. Prerequisite: Instructor's consent. May be repeated for up to 4 hours of degree credit.

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### Greek (GREK)

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**GREK1003 Elementary Ancient Greek I (Fa)** The rudiments of classical Greek, with concentration on grammar, vocabulary, and syntax. Short selections from ancient authors lead to basic reading ability.

**GREK1013 Elementary Ancient Greek II (Sp)** A continuation of the rudiments of classical Greek, with concentration on grammar, vocabulary, and syntax. Short selection from ancient authors lead to basic reading ability.

**GREK1203 Beginning Modern Greek I (Fa)** Conversational language of Greece today. Stresses correct pronunciation, aural comprehension, and simple speaking ability. Leads to active mastery of basic grammar and limited reading ability.

**GREK1213 Beginning Modern Greek II (Sp)** A continuation of GREK 1203. Stresses correct pronunciation, aural comprehension, and simple speaking ability. Leads to active mastery of basic grammar and limited reading ability.

**GREK2003 Plato's Apology of Socrates or Greek New Testament or Both (Fa)**

**GREK2013 Homer (Sp)** Selections from the Iliad or the Odyssey: a survey of Greek epic poetry.

**GREK2203 Intermediate Modern Greek I (Fa)** Continuation of Beginning Modern Greek. Prerequisite: GREK 1203 and GREK 1213, or equivalent.

**GREK2213 Intermediate Modern Greek II (Sp)** Continuation of Intermediate Modern Greek I. Prerequisite: GREK 2203 or equivalent.

**GREK4003 Greek Lyric Poetry (Irregular)** Readings from selected Greek lyric poems, to be chosen from several appropriate authors from the 7th through the 5th centuries BCE: Archilochus, Hipponax, Sappho, Alcaeus, Tyrtaeus, Mimnermus, Semonides, Solon, Xenophanes, Theognis, Pindar, Bacchylides. Prerequisite: GREK 2013 or equivalent.

**GREK4013 Greek Epic Poetry (Irregular)** Study of the primary works of Greek hexameter poetry, including Homer, Hesiod, and/or the Homeric Hymns, with special attention to issues of oral composition and performance. Prerequisite: GREK 2013.

**GREK4023 Greek Philosophy (Irregular)** Study of representative works of Greek philosophy, including those of the Pre-Socratics, Plato, and/or Aristotle. Prerequisite: GREK 2013 or equivalent.

**GREK4033 Herodotus or Thucydides (Irregular)** Readings of Herodotus, Book VII, and Thucydides, Book VI; collateral readings on the Persian and Peloponnesian Wars. Prerequisite: GREK 2013 or equivalent.

**GREK4043 Greek Drama (Irregular)** Readings of 2 tragedies and one comedy; a study of the Greek theatre. Prerequisite: GREK 2013 or equivalent.

**GREK4053 Greek Syntax and Composition (Irregular)** Prerequisite: GREK 2013 or equivalent.

**GREK4063 Hellenistic Poetry (Irregular)** Selections from significant post-classical authors, including Callimachus, Theocritus, Bion, Moschus, Herondas, Apollonios of Rhodes, and/or poets of the Greek Anthology. Special attention to archaic and classical influences, contemporary Hellenistic culture, and Roman responses. Prerequisite: GREK 2013.

**GREK4073 Ancient Greek Novel (Irregular)** Study of the development of the Greek novel including the works of Lucian, Longus, Heliodorus, and/or Achilles Tatius. Prerequisite: GREK 2013 or equivalent.

**GREK4083 Greek Epigraphy (Irregular)** Study of inscriptions, especially Attic, in their historical and social contexts, from the 8th century BCE to the Hellenistic/Roman period. Training in epigraphical conventions and symbols. Prerequisite: GREK 2013 or equivalent.

**GREK4093 Biblical and Patristic Greek (Irregular)** Selected readings from appropriate texts, varying by semester, including the Septuagint, New Testament, Apostolic Fathers, and other patristic literature to the 5th century CE. Reading and discussion of selected texts in major genres. Prerequisite: GREK 2013 or equivalent.

**GREK4103 Greek Oratory (Irregular)** Readings from selected speeches, to be chosen from one or more appropriate authors: Lysias, Antiphon, Demosthenes, Isocrates, Andocides. Study of sophism and rhetoric of Athens in the 5th and 4th centuries BCE. Prerequisite: GREK 2013 or equivalent.

**GREK475V Special Investigations (Sp, Su, Fa) (1-6)**

**GREK575V Special Investigations (Irregular) (1-6)** May be repeated for up to 12 hours of degree credit.

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### Graduate Education Courses (GRSD)

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**GRSD400V Research Experience Undergraduate**

**Internship (Su) (1-6)** Internship for students participating in an

undergraduate research experience. May be repeated for up to 12 hours of degree credit.

**GRSD5003 The Professoriate: Teaching, Learning and Assessment (Sp)** Designed to introduce the future academic professional to the expectations of the faculty teaching role in higher education. Topics include techniques of effective teaching and learning, dealing with a variety of institutional expectations, course management issues, and using models of effective teaching across a broad spectrum of class sizes and levels.

**GRSD5013 Practicum for Future Faculty (Irregular)** This course is designed to follow GRSD 5003 and to give participants opportunities to apply theories and methods learned in that course. To accomplish these goals, the course instructor helps the participant arrange a mentoring opportunity as part of this course. Prerequisite: GRSD 5003. May be repeated for up to 6 hours of degree credit.

**GRSD502V Special Topics in Preparing Future Faculty (Irregular) (1-3)** Seminar on selected topics for those anticipating a career teaching in higher education. May be repeated for up to 6 hours of degree credit.

**GRSD5033 The Professoriate: Research and Service (Fa)** Designed to complement GRSD 5003 by focusing on topics of interest to future academic professionals beyond those related to instruction. Topics include developing a research statement, strategies for securing an academic position the general nature of employment and service expectations in higher education, research ethics, and funding issues, including grant proposal writing.

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### Human Environmental Sciences (HESC)

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**HESC1013 Introduction to Clothing Concepts (Sp, Fa)** Origin of dress, the evolution of fashion as an economic power, the sociological and psychological aspects of clothing in various cultures, aesthetics of dress, selection and consumption of clothing. Lecture 3 hours per week. Pre- or corequisite: HESC 1501 (for HESC majors only).

**HESC1023 Introduction to Apparel Production (Sp, Fa)** Course focuses on basic principles of apparel production and analysis of garment components of mass produced apparel. Students utilize computer generated designs in the production process. Laboratory 6 hours per week. Prerequisite: HESC students only.

**HESC1031 About the Profession (Fa)** Exploration of the field of interior design. Guest speakers and field trips. Pre- or Corequisite: HESC 1034 and HESC 1501.

**HESC1034 Studio 1 Design Exploration 1 (Fa)** Introduction to design language through two- and three-dimensional projects. Pre- or Corequisites: HESC 1031 and HESC 1501.

**HESC1044 Studio II: Design Exploration II (Sp)** Ideation, representation, and space making. Prerequisite: HESC 1031 and HESC 1034.

**HESC1053 Computer Based Methods for Apparel (Sp, Fa)** This course is designed to give students basic experience with CAD (computer aided design) software in a computer laboratory environment. Lecture 2 hours per week.

**HESC1201 Introduction to Dietetics and Nutrition (Fa)** Introduction to profession of dietetics and nutrition including history, scope and future of professionals with emphasis on academic preparation, internships, acquisition of professional credentials, career ladder and career opportunities. Guest speakers will supplement lectures and assignments.

**HESC1213 Nutrition in Health (Sp, Fa)** The functions of food, body processes, optimum diets in relation to health and physical fitness.

**HESC1403 Life Span Development (Sp, Fa)** A broad overview of the physical, psychological, and social development of the individual from conception until death. Emphasis is on individual development in a family context. Lecture 3 hours per week.

**HESC1411L Observation of Children in Early Childhood Programs (Sp)** In a laboratory setting, students will learn foundational observation skills necessary to understand and assess the development of young children. Emphasis will be on objectivity, confidentiality, and accuracy as students practice a variety of documentation techniques. Corequisite: HDFS majors only.

**HESC1501 Orientation to Human Environmental Sciences (Sp, Fa)** Adjustment to study and personal problems in college. History of human environmental sciences and breadth of its professional opportunities.

**HESC1601 Work Experience Practicum (Sp)** This course is designed to give HRMN students credit for their required 1,000 hours of satisfactory and verifiable hospitality work experience once they are enrolled in the HRMN concentration. Each credit hour is equivalent to 250 work hours. Prerequisite: Declared HRMN concentration. May be repeated for up to 4 hours of degree credit.

**HESC1603 Introduction to Hospitality Management (Sp, Fa)** Overview of the hospitality industry with an emphasis on the history, scope, economic trends, and professional opportunities of this global industry. Professional areas include: commercial, institutional,

and long term residential food service; hotels and resorts; travel and tourism; convention and club management.

**HESC200V Special Problems (Irregular) (1-3)** Special problems are conducted under the guidance of a faculty member and include an inquiry initiated by the student into an aspect of study or program not dealt with in the regular curriculum. Students are required to submit to their instructor a detailed outline of the problem they will examine. May be repeated for up to 3 hours of degree credit.

**HESC2013 Quality Assessment of Apparel (Sp, Fa)** Study of apparel from the perspective of structure, aesthetics, cost and expected performance of the finished product. Lecture 2 hours per week, lab 2 hours per week. Prerequisite: HESC 1023 and HESC 2053.

**HESC2023 Visual Merchandising and Fashion Promotion (Sp, Fa)** Fashion components, terminology and design features as applied to apparel. Principles and techniques of visual merchandising and fashion promotions as a means of mass communication in the fashion industry. Window display and store floor planning for commercial purposes. Lecture 2 hours, laboratory 2 hours per week. Pre or Corequisite: APST majors only.

**HESC2053 Introduction to Textile Science (Sp, Fa)** Textile fibers and fabrics, their structure, properties, manufacture, wearing qualities and methods of laundering, finishing, and dyeing. Artistic and economic selection of materials for clothing and household furnishings. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component.

**HESC2111L Foods I Laboratory (Sp, Fa)** Laboratory exercises and practice applicable of Foods I. Lab 3 hours. Corequisite: HESC 2112.

**HESC2112 Foods I (Sp, Fa)** Physical and chemical characteristics of foods and factors that affect these characteristics during storage and preparation. Lecture 2 hours. Pre- or corequisite: HESC 1501 (applies to HESC majors only). Corequisite: HESC 2111L. Prerequisite: CHEM 1074 and CHEM 1071L (or CHEM 1103).

**HESC2123 Catering Management (Sp)** Course focuses on catering in food service operations and management, including on-premise, off-premise, working with a contract management operation and theme catering. Emphasis is concentrated on the functions of catering to include planning, operations, organizing the event, equipment, implementing, controlling and legal issues. Lecture 2 hours, lab 3 hours. Corequisite: Lab component. Prerequisite: HESC 1603.

**HESC2203 Nutrition for Exercise and Sport (Sp)** The integration of concepts from nutrition and exercise physiology into an applied multidisciplinary study of how food, beverages and dietary supplements influence physical performance. Prerequisite: HESC 1213.

**HESC2401L Infant and Toddler Development Laboratory (Sp, Fa)** Corequisite: HESC 2402.

**HESC2402 Infant and Toddler Development (Sp, Fa)** Human development from conception through toddlerhood. Physical, emotional, social, and cognitive development is covered. Lecture 2 hours per week. Corequisite: HESC 2401L.

**HESC2413 Family Relations (Sp, Fa)** Courtship, marriage, and parenthood in the United States, with attention to cultural and psychological factors which affect relations among family members. On-campus and Web-based delivery sections are offered. Lecture 3 hours per week. Pre- or corequisite: HESC 1501 (applies to HESC majors only).

**HESC2433 Child Development (Sp, Fa)** Theory, research, and application in cognitive, social, physical, and linguistic development of the child aged three to adolescence. Lecture 3 hours per week; time arranged for directed observation. Prerequisite: HESC 1403 or PSYC 2003.

**HESC2443 The Hospitalized Child: Child Life Programming (Sp)** Introduces child life programming in health care settings. Topics include: roles and expectations of a Child Life Specialist, importance of play, coping techniques, family advocacy, administration and professionalism. Lecture 3 hours per week.

**HESC255V Special Topics (Irregular) (1-6)** Topics not covered in other courses or a more intensive study of specific topics in the specializations of human environmental sciences.

**HESC2603 Food Service Purchasing (Fa)** Food purchasing with emphasis on specifications. Relationship of food purchasing to available equipment. Receiving, storage, distribution, and inventory control. Meal quality control and costing. Lecture 3 hours per week. Prerequisite: HESC 1603 or HESC 1201.

**HESC2633 Hotel Operations Management (Fa)** Detailed study of different departments within hotel properties. Emphasis on front office, food and beverage, housekeeping, engineering, security, sales and night audit reporting. Prerequisite: HESC 1603.

**HESC2643 Principles of Tourism (Sp)** Application of economic and regional development concepts and theories to destination product and development. Provides students with a thorough overview of tourism planning at the local, regional and national level while providing a variety of practical planning theories, procedures and tourism guidelines to meet the diverse needs of travelers, destination

communities, and hospitality organizations, public, non-governmental organizations, and the private sector. Prerequisite: HESC 1603.

**HESC2805 Studio 3: Basic Space Planning and Communication (Fa)** An introduction to interior space articulation and the creation of small scale spaces. Components of various presentation methods and formats. Overnight travel requires additional fees. Prerequisites: HESC 1044 and HESC 2853. Corequisite: HESC 2823.

**HESC2815 Studio 4: Design Programming (Sp)** Studio activities with emphasis on conceptualization, design theory and applications, ideation, programming and computer application. Overnight travel required. Prerequisite: HESC 2805 and HESC 2823.

**HESC2823 Interior Design Materials and Resources (Fa)** A study of materials and resources used in designing residential and contract interiors. CSI format utilized. Lecture 3 hours per week. Corequisite: HESC 2805. Prerequisite: HESC 1044 and HESC 2853.

**HESC2853 Introduction to Textiles for Interior Designers (Sp)** Introduction to textile properties as they apply to interior applications, emphasis on interior serviceability and codes.

**HESC2883 History of Interiors (Fa)** Study of historic interiors and furniture from antiquity through the present day. Identification of interior styles and furniture of these eras is emphasized.

**HESC3003 Apparel Production (Sp, Fa)** A study of product development and production and the related vocabulary necessary to communicate professionally within the industry. Laboratory 6 hours per week. Prerequisite: HESC 1023 and HESC 2013.

**HESC3013 Introduction to Fashion Merchandising (Sp, Fa)** A study of the retailing of fashion. Included are market structures, store philosophies, job descriptions, responsibilities at the management level, structural operations, work procedures, job performance evaluation, job application, the resume, interdependencies of the retail store with other segments of the fashion industry. Recommended for students seeking a career in business organizations which produce and/or distribute fashion products and services. Lecture 3 hours per week. Prerequisite: HESC 1013 and (AGEC 1103 or ECON 2143).

**HESC3033 Fashion Merchandising Methods (Sp, Fa)** Exploration of activities associated with the procurement of fashion apparel. A fashion analysis is directed toward apparel demands and the creation of a fashion statement by the use of specific quantitative skills. Course follows fashion item from the designer to the store. Lecture 3 hours per week. Prerequisite: HESC 1013 and Math 1203.

**HESC3203 Nutrition for Health Professionals and Educators (Sp)** Fundamental human nutrition; nutritive value of foods and general functions of nutrients based on concepts derived from inorganic and organic chemistry. Examples relating nutrition to disease used as illustrations to deepen understanding of normal nutrition. Lecture 4 hours per week. Prerequisite: HESC 1213, CHEM 2613 and CHEM 2611L.

**HESC3213 Dietetic and Nutrition Practice: Tools and Applications (Fa)** Standards of practice, ethics, application of interviewing and counseling techniques, medical terminology, documentation in medical records, reimbursement and marketing in the fields of dietetics and nutrition. Prerequisite: HESC 1213. Pre- or Corequisite: HESC 2112 and HESC 2111L.

**HESC3401L Child Guidance Laboratory (Sp, Fa)** Corequisite: HESC 3402.

**HESC3402 Child Guidance (Sp, Fa)** Introduction to the guidance system. Focus on discipline techniques that are positive and age/stage appropriate for children ages 3-8. Lecture 2 hours/week plus 1 hour demonstration. Corequisite: HESC 3401L. Prerequisite: HESC 2433.

**HESC3423 Adolescent Development (Sp)** Physiological and psychological development of the older child and youth, from pre-adolescence to adulthood. Theories of adolescent development. Cross-cultural studies. Peer group influences. Some attention to pathological behaviors. Prerequisite: HESC 1403 or PSYC 2003.

**HESC3443 Families in Crisis (Fa)** An interdisciplinary perspective on internal and external crises faced by contemporary families, including substance abuse, natural disasters and other crisis events. Students will explore the family processes during such experiences and develop strategies for stress management, coping, and recovery. Lecture 3 hours per week.

**HESC3604 Food Preparation for the Hospitality Industry (Sp, Fa)** Preparation and service of food for large groups. Recipe standardization, menu planning, cost control, sanitation, safety, and overall quality assurance. Observation of and experience with quantity food production and use of equipment. Lecture 2 hours, laboratory 6 hours per week. Corequisite: Lab component. Prerequisite: HESC 1213, HESC 2112, HESC 2111L, and HESC 2603.

**HESC3613 Resort Management (Sp)** Offers a complete approach to the operation of resort properties. Beginning with historical development, details are presented in planning, development, financial investment management, and marketing that deal with the unique nature of resort business. The course also examines the future impact of the condominium concept, time-sharing, technological change, and the increased cost of energy and transportation.

Prerequisite: HESC 1603 and HESC 2633.

**HESC3623 Legal Issues in the Hospitality Industry (Fa)** Introduction to the laws and regulations pertaining to the hospitality industry. The focus is on management responsibilities for the prevention of legal action, understanding federal and state regulations with an emphasis of study of recent litigations. Prerequisite: HESC 1603. (Same as RECR 3873)

**HESC3633 Front Office Management (Sp)** A systematic approach to hotel/motel front office management. Topics include reservations, greetings and service industry, and career opportunities in the field. Pre or Corequisite: HESC 2633

**HESC3653 Food Systems Management (Fa)** Organization and management of institutional and hospital food service with focus on functions of management, health codes, and professional development. Lecture 3 hours per week. Prerequisite: HESC 1213.

**HESC3763L Family Resource Management Laboratory (Fa)** Explores management concepts and practices in the lives of individuals and families from a systemic perspective. Lecture 2 hours per week. Laboratory 2 hours per week.

**HESC3805 Studio 5: Design and Construction (Fa)** Emphasis on residential and commercial building systems and contract documents. Continued development of presentation skills including hand and computer-based techniques. Prerequisite: HESC 2815 and HESC 3843 and a satisfactory portfolio review.

**HESC3815 Studio 6: Large Scale Commercial Interiors (Sp)** Advanced studio problems involving larger-scale interior spaces for public use. Overnight field trip requires additional fees. Corequisite: HESC 4813 and HESC 4823. Prerequisite: HESC 3805.

**HESC3841 Portfolio Workshop (Fa)** Preparation of portfolio and materials for interior design profession. Prerequisite: Junior standing in the Interior Design Program. May be repeated for up to 3 hours of degree credit.

**HESC3843 Building Systems for Interior Design (Sp)** Exploration of interior design applications of lighting, electrical, and other building support systems. Prerequisite: HESC 2805. Corequisites: HESC 2815 or equivalent.

**HESC400V Special Problems (Sp, Su, Fa) (1-6)**

**HESC4023 Advanced Apparel Merchandising (Sp, Fa)** Advanced Apparel Merchandising aspects of fashion through interpretation of apparel classification, seasonal cycles, stock emphasis, assortment strategies, target customers, and apparel trends and an overview of marketing communication including advertising, personal selling and sales promotion. Lecture 2 hours, Laboratory 2 hours per week. Prerequisite: HESC 3013 and HESC 3033 .

**HESC4033 Advanced Textile Study (Sp, Fa)** Use of advanced computer-aided-design (CAD) software to enhance skills in textile studies in a computer laboratory environment. Lecture 2 hours, Laboratory 2 hours per week. Prerequisite: HESC 1053 and HESC 2053.

**HESC4043 History of Apparel (Fa)** The evolution of clothing from ancient times to the twentieth century with emphasis upon Western civilization. Cultural and economic factors affecting dress and customs associated with dress will be stressed. Lecture three hours per week. Prerequisite: ANTH 1023 or SOCI 2013 and HESC 1013.

**HESC4053 Contemporary Apparel (Sp)** Fashion as a social force, the origin, scope, theory, and history of the fashion business, the materials of fashion, the fashion producers, auxiliary fashion enterprises, designers, fashion leaders, and leading market. Lecture three hours per week. Prerequisite: HESC 4043.

**HESC4063 Advanced Apparel Production (Sp, Fa)** An advanced study of product development incorporating technology used in the industry for a career in fashion merchandising and/or product development in a computer laboratory environment. Lecture 2 hours and laboratory 2 hours per week. Prerequisite: HESC 3003 and HESC 2013.

**HESC4071 Apparel Studies Pre- Internship (Sp)** A study of job descriptions, responsibilities at the management level, structural operations, work procedures, job performance evaluations, job application, the resume, and portfolio development in preparation for HESC 4082, Apparel Studies Internship. Lecture 1 hour per week. Prerequisite: Junior Standing or consent of instructor.

**HESC4082 Apparel Studies Internship (Sp,Su,Fa)** A practical experience in a retail store or in a work situation related to the apparel industry to gain insight into the field of apparel merchandising and operations. Prerequisite: Junior standing and 2.50 cum GPA and HESC 1053, HESC 2013, HESC 2023, HESC 3003, HESC 3013 and HESC 3033 and HESC 4071 and consent of instructor.

**HESC4103 Experimental Foods (Sp)** Application of experimental methods for investigations in cookery. Group and individual problems. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: HESC 2112 and HESC 2111L and CHEM 1123 and CHEM 1121L (or HESC 2112 and HESC 2111L and CHEM 1074 and CHEM 1071L).

**HESC4213 Advanced Nutrition (Fa)** Normal nutrition with emphasis on utilization of nutrients. Lecture and reports on current

literature 3 hours per week. Prerequisite: CHEM 3813 and HESC 3203.

**HESC4223 Nutrition During the Life Cycle (Fa)** Study of normal nutrition emphasizing quantitative needs for nutrients as functions of biologic processes that vary during stages of the life cycle. Nutritive needs during pregnancy and childhood are emphasized with some attention to nourishing aging and elderly adults. Factors that affect food choices and eating behavior are also considered. Lecture 3 hours per week. Prerequisite: HESC 1213 and either (BIOL 2213 and BIOL 2211L or ANSC 3032 or POSC 3032 and ANSC 3042 or POSC 3042) or (CHEM 1074 and CHEM 1071L and BIOL 1543 and BIOL 1541L).

**HESC4243 Community Nutrition (Sp)** Identifying, assessing, and developing solutions for nutritional problems encountered at the local, state, federal, and international levels. Lecture 3 hours per week. Prerequisite: HESC 1213.

**HESC425V Food and Nutrition Seminar (Sp) (1-2)** Upperclassmen, graduate students and members of faculty meet weekly for presentation and discussion of selected topics. Two credits (2 semesters) required of all foods and nutrition graduate students. Prerequisite: HESC 3203. May be repeated for up to 2 hours of degree credit.

**HESC4264 Medical Nutrition Therapy I (Fa)** Principles of nutritional care with emphasis on pathophysiology, assessment, and treatment of chronic illnesses. Lecture 3 hours, laboratory 3 hours per week. Corequisite: Lab component. Pre- or corequisite: HESC 4213 and HESC 3213. Prerequisite: BIOL 2213 and BIOL 2211L (or ANSC or POSC 3042) and CHEM 3813.

**HESC4273 Medical Nutrition Therapy II (Sp)** Principles of nutritional care with emphasis on pathophysiology, assessment, and treatment in critical illness. Lecture 3 hours per week. Prerequisite: HESC 4264.

**HESC4303 Professional Development in Human Environmental Sciences (Sp)** Enhancement of the professional and personal development of students by fostering an understanding of the historical and philosophical basis of Human Environmental Sciences, with an emphasis on the interrelationships and integration of the component specialties. Clarification of career goals and development of professional skills.

**HESC4313 Building Family and Community Relationships (Sp)** This course will help students interested in early childhood to value the role parents play in schools and the role schools play in a community. Various models of parent involvement will be explored. Students will plan a school-community collaborative which values diverse cultures.

**HESC4332 Curriculum and Assessment: Birth to Three Years (Sp)** The course will introduce students to curriculum planning and assessment in programs serving children from birth to three years of age. Emphasis will be on responsive relationships and curriculum focused on routines and activities. Prerequisite: HESC 1411L, HESC 2402/2401L. Corequisite: HESC 4332L

**HESC4332L Curriculum and Assessment: Birth to Three Years Laboratory (Sp)** Laboratory. Corequisite: HESC 4332.

**HESC4342 Curriculum and Assessment: Three Years through Kindergarten (Fa)** Students will plan curriculum and assessment for children three years of age through kindergarten. Emphasis will be on professionalism, philosophy and a code of ethics. Students will interact with young children and facilitate learning and assessment experiences in a program for young children. Prerequisite: HESC 1411L, HESC 3402, and HESC 3402L. Corequisite: HESC 4342L.

**HESC4342L Curriculum and Assessment: Three Years through Kindergarten (Fa)** Laboratory. Corequisite: HESC 4342.

**HESC4373 Field Experience in Birth through Kindergarten Programs (Sp)** This course provides the student with interactive and observational experiences with young children in community-based early childhood programs. Prerequisite: HESC 4332, HESC 4332L, HESC 4342, and HESC 4342L.

**HESC4423 Adult Development (Fa)** Examine individual development beginning with the transition adulthood through middle age; approximate age ranges are 18-60 years. Content focuses on physical, cognitive, psychological, and social changes that occur throughout this period of the life span. The impact of love, work, and family on men's and women's movement through the transitions that comprise adulthood are emphasized. Prerequisite: HESC 1403 or PSYC 2003 and junior standing.

**HESC4433 Dynamic Family Interaction (Sp)** Examination of family interaction across the lifespan. Methods for enhancing marriage and family relations will be examined. Sources of marital conflict, intergenerational support and negotiations process will be analyzed. Lecture three hours per week. Prerequisite: HESC 2413 and junior standing.

**HESC4443 Gerontology (Sp)** Physiological and psychological development of the aging individual, extended family relations, service networks for the elderly, and retirement activities. Some attention to housing and care needs of persons in advanced years.

Lecture 3 hours per week. Seminar. Prerequisite: HESC 1403 (or HESC 2413 or PSYC 2003 or SCWK 2133) and junior standing.

**HESC4453 Parenting and Family Dynamics (Sp, Fa)** Focus is on influence of parenting and family dynamics on individual development, especially factors in family life which contribute to normal psychological development. Topics include family values, the psychology of sex and pregnancy, the transition to parenthood, childbearing techniques, family influences on cognitive and social development, and changes in family relationships during the life cycle. Prerequisite: HESC 1403 or PSYC 2003.

**HESC4463 Administration and Evaluation of Child Development (Fa)** Programs Information on planning, developing, operating, and evaluating child development programs. Topics include physical facilities, staff, curriculum, budgets, parent involvement, and education. Lecture and discussion 3 hours per week. Prerequisite: HESC 3402 and HESC 3401L and junior standing.

**HESC4472 Child Development Practicum (Sp)** Interaction with parents and planning, implementing, and evaluating directed experiences with children ages 3-5 in an NAEYC accredited laboratory setting -- U. of A. Nursery School. 2 hours lecture per week. Corequisite: HESC 4472L. Prerequisite: HESC 3402 and HESC 3401L.

**HESC4472L Child Development Practicum Laboratory (Sp)** Actual experience facilitating children's learning with classroom activities. Participation in planning, implementing, and evaluating individual children and program. 6 hours laboratory per week. Corequisite: HESC 4472. Prerequisite: HESC3402 and HESC3401L.

**HESC4483 Internship in Human Development and Family Studies (Sp, Su, Fa)** The internship experience provides practical experience for students in settings that are designed to serve the needs of individuals and/or families across the life span. Students must work a minimum of 60 hours per credit hour in the setting. Must be taken no sooner than the summer following completion of junior year. May be taken for an additional 3 hours of elective credit if second experience is distinctly different from first internship. Prerequisite: GPA Greater or Equal to 2.75. May be repeated for up to 3 hours of degree credit.

**HESC4493 Public Policy Advocacy for Children and Families (Fa)** Public policy advocacy as related to children and family issues. Strategies for advocacy will be emphasized. Lecture three hours per week.

**HESC455V Special Topics (Irregular) (1-6)** Topics not covered in other courses, a focused study of specific topics in the students' areas of concentration. May be repeated for up to 6 hours of degree credit.

**HESC4623 Selection and Layout of Food Service Equipment (Sp)** Types of food service. Planning food flow from receiving to service of meals. Choosing proper equipment for the flow plan and service items. Sanitation, maintenance, comparison of personnel requirements. Lecture 3 hours per week. Prerequisite or Corequisite: HESC 3604. Prerequisite: HESC 2603.

**HESC4633 Advanced Hospitality Operations (Sp)** In-depth comprehensive study, strategic planning and analysis of the manager's role in successful hotel operations including application of specialized computer software and human resource management skills. Lecture 2 hours per week. Laboratory 3 hours per week. Pre- or Corequisite: HESC 3633.

**HESC4643 Meetings, Events and Convention Management (Fa)** Focuses on the planning and management of meetings and conventions in the hospitality industry. Prerequisites: HESC 1603

**HESC4653 Global Travel and Tourism Management (Fa)** Course recounts the history of travel, explores the future, and discusses the components of tourism from a global perspective. Prerequisite: HESC 1603 and HESC 2643.

**HESC4663 Issues & Trends in Hospitality & Tourism (Sp)** A study of world trends, issues, and the current state of the industry as well as predictions for the future of lodging, cruise, restaurant, technology, travel and tourism industries with applications to forecasting change in the hospitality and tourism industries. Prerequisite: HESC 1603.

**HESC4673 Destination Marketing & Operations (Sp)** This course is designed to provide students with a basic understanding of the tasks and processes involved in running a successful destination management organization (DMO). The course places heavy emphasis on destination marketing. Prerequisite: HESC 1603.

**HESC4683 Food and Wine Management, Service and Evaluation (Fa)** This course provides students with knowledge of the sensory relationship of wine and food and the important role this process has on gastronomic satisfaction and gastronomic tourism. Course topics will include developing and marketing the wine/food tourism product, wine and food pairing as a hierarchical process, gastronomic identity, Old and New World traditions, managing a food and wine program, trends in food and wine, and promoting Arkansas food and wine. Students must have senior standing and be at least 21 years old. Students are required to complete an alcohol compliance education program prior to taking course. Students who may

not imbibe for any reason should speak with the instructor about an accommodation and alternative assignments. Prerequisites: Senior standing, hospitality major, completion of alcohol compliance education program, HESC 2112/2111L, and HESC 2603.

**HESC4693 Hospitality Management Internship (Sp, Su, Fa)** Managerial experience in hospitality industry focusing on purchasing/production, planning and customer service. ServSafe certification from the National Restaurant Association must be obtained prior to internship. Additional 3 hours credit may be earned if second experience is distinctly different from first internship. Prerequisite: HESC 3604 and HESC 3653. May be repeated for up to 3 hours of degree credit.

**HESC4753 Family Financial Management (Sp, Fa)** Economic considerations of the family in a rapidly changing society. Family finance and consumer problems are emphasized.

**HESC4805 Studio 7: Comprehensive Design Process 1 (Fa)** Proposal development for interior design studio problems. Emphasis on research and programming as they relate to comprehensive design solutions. Prerequisite: HESC 3815 and HESC 4823.

**HESC4811 Internship for Interior Design (Su)** Summer supervised work experience and observation of operations/management procedures in approved design, government or service business. Prerequisite: HESC 3815 and HESC 4823.

**HESC4813 Human Factors in Interior Design (Sp)** (Formerly HESC 3823). Emphasis is given to human behavior as applied to interior design. Types of interior spaces, environmental effects on behavior, ergonomics, interior design needs of special groups, and human factors programs are studied. Lecture 3 hours per week. Prerequisite or Corequisite: HESC 2815. Prerequisite: Completion of any two of the following: ANTH 1023, SOCI 2013 or PSYC 2003.

**HESC4815 Studio 8: Comprehensive Design Process II (Sp)** Comprehensive design studio synthesizing design skills, knowledge, and critical thinking skills developed in previous design studios, including ideation, programming, construction, and human factors. Prerequisite: HESC 4805.

**HESC4823 Professional Practice for Interior Design (Sp)** General procedures for operating and maintaining an interior design business. Business documentation, communication and computer application skills, professional responsibilities and ethics. Lecture 3 hours per week. Prerequisite: HESC 3805.

**HESC485V Design Tours (Irregular) (1-3)** Domestic and international study tours of a variety of design locations that contribute to the body of knowledge. Prerequisite: HESC 1044.

**HESC4901 Apparel Studies Pre-Study Tour (Sp) (Even years, Fa)** A study of specific regional and international fashion markets for apparel studies in preparation for HESC 4912 APST Study Tour. The course examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets. Prerequisite: 2.0 minimum GPA. May be repeated for up to 4 hours of degree credit.

**HESC4903 Recent Advances in Manufacturing and Merchandising (Su, Fa)** Study of the interaction between manufacturing, marketing, and merchandising in the apparel industry through classroom instruction and study tours. Includes study trip; length based upon destination. Additional fees required. Lecture 3 hours. May be repeated for up to 12 hours of degree credit.

**HESC4912 Apparel Studies Study Tour (Su) (Even years, Fa)** An on-site study of specific regional and international fashion markets for apparel studies. Course further examines the design, production, distribution and retailing of fashion goods from couture fashion to mass markets as outlined in HESC 4901. Course includes study trip; length based upon destination. Additional fees required. Prerequisite: Minimum 2.0 GPA and HESC 4901. May be repeated for up to 8 hours of degree credit.

**HESC5003 Apparel Studies in the Global Economy (Even years, Fa)** Analysis of economic, social and political aspects of the domestic and international textile and apparel industries. Lecture 3 hours.

**HESC5013 Advanced Apparel Pattern Design (Sp)** Use of computer aided design technology to perform pattern making techniques for apparel production. Laboratory 5 hours per week. Prerequisite: HESC 3003.

**HESC5023 Social, Psychological and Cultural Aspects of Dress (Odd years, Fa)** Integration of social, psychological and cultural theories as they apply to appearance and clothing behavior. Lecture 3 hours.

**HESC502V Special Problems Research (Sp, Su, Fa) (1-6)**

**HESC5033 Issues and Trends in Textile Studies (Odd years, Sp)** Studies of advances in textile science and recent developments in the textile industry. Lecture 3 hours.

**HESC5043 Theories and Practices in Apparel Merchandising (Even years, Sp)** Theoretical perspectives, concepts and current practices that influence apparel merchandising. Lecture 3 hours.

**HESC5223 Nutrition During the Life Cycle (Fa)** Study of normal nutrition emphasizing quantitative needs for nutrients as func-

tions of biologic processes that vary during stages of the life cycle. Nutritive needs during pregnancy and childhood are emphasized with some attention to nourishing aging and elderly adults. Factors that affect food choices and eating behavior are also considered. Lecture 3 hours per week. On campus and web-based delivery is offered. Prerequisite: Graduate standing and consent of instructor.

**HESC522V Readings in Nutrition (Sp) (1-6)** Seminar and individual study. Prerequisite: HESC 4213 or HESC 4223 or ANSC 3143.

**HESC5264 Medical Nutrition Therapy I (Fa)** Principles of nutritional care with emphasis on pathophysiology, assessment and treatment in chronic illnesses. Lecture 3 hours, laboratory 3 hours per week. Prerequisite: Graduate standing and consent of instructor.

**HESC5273 Medical Nutrition Therapy II (Sp)** Principles of nutritional care with emphasis on pathophysiology, assessment and treatment in chronic illness. Lecture 3 hours per week. Prerequisite: HESC 5264.

**HESC5403 Advanced Family Relations (Fa)** Subtle elements in marriage, parent-child, and other relations among family members and between the family and the larger community. Recent cultural change as it affects the family. Recent research and literature. Prerequisite: Graduate standing.

**HESC5423 Theories of Human Development (Fa)** Classic and contemporary theories and theoretical issues concerning human development across the life span. Prerequisite: Graduate standing.

**HESC5433 Advanced Child Development (Sp)** Theory and research concerning normal behavior and development in childhood. Acquaintance with library resources, classic studies, and recent literature.

**HESC5463 Research Methodology in Social Sciences (Sp)** Logical structure and the method of science. Basic elements of research design; observation, measurement, analytic method, interpretation, verification, presentation of results. Applications to research in the economic and sociological problems of agriculture and Human Environmental Sciences. Prerequisite: Graduate standing. (Same as AGED 5463)

**HESC5643 Meetings and Convention Management (Fa)** Focuses on the planning and management of meetings and conventions in the hospitality industry.

**HESC5653 Global Travel and Tourism Management (Fa)** The course recounts the history of travel, explores the future, and discusses the components of tourism from a global perspective.

**HESC5663 Critical Issues and Trends in Hospitality and Tourism (Sp)** The hospitality industry is arguably one of the most important sources of income and foreign exchange and is growing rapidly. However, national and international crises have huge negative economic consequences. This course explores change in the world and applies this to forecasting change in the hospitality and tourism industries. This course examines the current state of the industry and makes educated predictions to the future of the lodging, cruise, restaurant, technology, and travel and tourism industries.

**HESC5683 Food and Wine Management, Service and Evaluation (Fa)** This course provides students with knowledge of the sensory relationship of wine and food and the important role this process has on gastronomic satisfaction and gastronomic tourism. Course topics will include developing and marketing the wine/food tourism product, wine and food pairing as a hierarchical process, gastronomic identity, Old and New World traditions, managing a food and wine program, trends in food and wine, and promoting Arkansas food and wine. Students must be at least 21 years old. Students are required to complete an alcohol compliance education program prior to taking course. Students who may not imbibe for any reason should speak with the instructor about an accommodation and alternative assignments. Limited to hospitality graduate students only. Prerequisite: Restricted to graduate students in HESC, must be 21 years old, completion of alcohol compliance education program.

**HESC600V Master's Thesis (Sp, Su, Fa) (1-6)**

**HESC700V Doctoral Dissertation (Sp, Su, Fa) (1-18)**  
Prerequisite: Candidacy.

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### Higher Education (HIED)

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**HIED5003 Overview-American Higher Education (Fa)** A basic course in the study of higher education open to all students seeking careers in colleges and universities. Serves as an introduction to the programs, problems, issues, and trends in higher education.

**HIED5033 College Students and Student Personnel Services (Fa)** Study of origins, functions, and policies in student personnel services in contemporary 2- and 4-year colleges and universities with emphasis on the student and student development.

**HIED5043 The Student in Higher Education (Sp)** Provides those who work or plan to work in post secondary educational institutions with an understanding of the student population in contemporary colleges and universities.

**HIED504V Practicum in Higher Education (Sp, Su, Fa) (1-6)** Students are assigned to a department or agency within or outside the university for professional experience under the joint

supervision of on-site personnel and university faculty. Periodic meetings are scheduled for evaluation, discussion, and examination of techniques.

**HIED5053 The Community-Junior College (Irregular)** An overview of the community college. Topics include the history and philosophy of the community college movement, students, curriculum, state and local campus governance, teaching, student personnel work, finance and issues, problems, and trends.

**HIED5073 Management of Higher Education Institutions (Su, Fa)** Principles and concepts of management and their application in college and university settings.

**HIED5083 History and Philosophy of Higher Education (Sp)** An examination of the history and development of higher education including the study of the philosophy, objectives, and functions of various types of institutions.

**HIED5173 Individual and Group Management Skills (Even years, Sp)** Development of knowledge, skill, and confidence in personal management, interpersonal relations, and structured group facilitation in a higher education setting. Prerequisite: Graduate Standing. For students not enrolled in the Higher Education Leadership program, permission of the instructor.

**HIED574V Internship (Sp, Su, Fa) (1-3)** Supervised field experiences in student personnel services, college administration, academic advising, institutional research, development, or other areas of college and university work.

**HIED600V Master's Thesis (Sp, Su, Fa) (1-6)**

**HIED6013 The Professoriate: Problems and Issues (Sp)** An examination of the vital issues and trends affecting college faculty personnel with emphasis upon institutional practices and policies.

**HIED6023 Introduction to the Study of Higher Education (Sp, Fa)** A requirement for all new doctoral and specialist students. Familiarization with writing requirements, library search procedures, library resources, and program requirements. Prerequisite: Admission to Higher Education program (Ed.S. & Ed.D.)

**HIED605V Independent Study (Sp, Su, Fa) (1-6)** Provides students with an opportunity to pursue special study in higher education.

**HIED6083 Management Skills for Effective Leadership (Irregular)** Development of management skills that enhance leadership includes understanding yourself, managing yourself, team building, personnel selection, group and individual decision-making, problem solving, managing conflict, developing valid performance appraisal systems, conducting performance appraisal interview, and other topics of current interest. Prerequisite: Doctoral students in Higher Education or permission of the instructor.

**HIED6093 Leading Change (Irregular)** An in-depth examination of leadership, change, and culture in postsecondary education.

**HIED6183 Organization Development and Change in Higher Education (Irregular)** An examination of the theory and practice of organization development as it relates to planned change in colleges and universities.

**HIED6323 Design and Evaluation of College Teaching (Irregular)** Theory and practice of effective college teaching. Emphasis is placed on preparation and evaluation of instruction.

**HIED6343 Strategies for Effective College Teaching (Even years, Sp)** An examination of traditional and innovative instructional strategies for use in college teaching.

**HIED6423 Trends, Issues and Problems in Higher Education (Odd years, Fa)** A study of the current problems and trends related to the field of higher education.

**HIED6653 Legal Aspects of Higher Education (Sp)** An examination of the legal status of higher education in the United States; the rights and responsibilities of educators and students including fair employment; due process; torts liability and contracts; student rights landmark court decisions; federal and state legislation having an impact on education.

**HIED6663 Finance and Fiscal Management (Sp)** Higher education finance and budgeting practices: problems, issues, trends, and policy issues in higher education.

**HIED6683 Governance and Policy Making in Higher Education (Odd years, Fa)** An analysis of governance and policy making affecting the control of colleges and universities. Attention is given to policy generation, governing board supervision, and the impact of institutional, professional, and regional groups as well as community, state, and federal pressures.

**HIED6693 Research Techniques in Higher Education (Irregular)** Techniques of research applicable to Higher Education

**HIED674V Internship (Sp, Su, Fa) (1-6)** Supervised field experiences in student personnel services, college administration, college teaching, institutional research, development, or other areas of college and university work.

**HIED699V Seminar (Sp, Su, Fa) (1-6)** A series of seminar for specialized study into areas of current significance in postsecondary education, such as leadership and planning; organization, development, and change; human resource development and appraisal, the

student in higher education; etc. May be repeated for up to 6 hours of degree credit.

**HIED700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Candidacy.

## History (HIST)

**HIST1003 Institutions and Ideas of Western Civilization I (Sp, Su, Fa)** Examination of major themes of Western history from the Ancient Near East through the Reformation and an evaluation of their contribution to contemporary life and culture.

**HIST1013 Institutions and Ideas of Western Civilization II (Sp, Su, Fa)** Examination of major themes of Western history since the Reformation and an evaluation of their contribution to contemporary life and culture.

**HIST1113 Institutions and Ideas of World Civilizations I (Irregular)** Introduces the major civilizations of the world in their historical context to 1500.

**HIST1133H Honors Institutions and Ideas of World Civilizations I (Irregular)** Study of Western and non-Western civilizations.

**HIST1123 Institutions and Ideas of World Civilizations II (Irregular)** Introduces the major civilizations of the world in their historical context, since 1500.

**HIST123H Honors Institutions and Ideas of World Civilizations II (Irregular)** Study of Western and non-Western civilizations

**HIST2003 History of the American People to 1877 (Sp, Su, Fa)** A history of American life encompassing constitutional, political, social, intellectual and economic development from prior to European colonization to 1877.

**HIST2003H Honors History of the American People to 1877 (Sp, Su, Fa)** A history of American life encompassing constitutional, political, social, intellectual and economic development from prior to European colonization to 1877. Particular emphasis will be placed on the evolution of American political institutions.

**HIST2013 History of the American People, 1877 to Present (Sp, Su, Fa)** A history of American life encompassing constitutional, political, social, intellectual and economic development from Reconstruction to the present.

**HIST2013H Honors History of the American People, 1877 to Present (Sp, Su, Fa)** A history of American life encompassing constitutional, political, social, intellectual and economic development from Reconstruction to the present. Particular emphasis will be placed on the evolution of American political institutions.

**HIST3003 History of Christianity (Irregular)** This course surveys the theological, political, and cultural history of Mediterranean Christianity, c. 30-600 CE. Special topics include patristics, Christianity and Empire, and the formation of Christian sacred space.

**HIST300V Internship in History (Sp, Su, Fa) (1-3)** Work experience in a historical agency arranged by the student under the guidance of a faculty member. Paper required. May be repeated for up to 6 hours of degree credit.

**HIST3023 The Islamic West, 650-1600 C.E. (Irregular)** History of Islamic North Africa and Spain from the Islamic conquest to the beginning of the modern period (CE 650-1600).

**HIST3033 Islamic Civilization (Irregular)** A survey of the foundation, evolution, and distinctive character of Islam, with attention to religion, literature, art, architecture, science, and political society. Particular attention given to the development of Islamic doctrines, sectarian movements, and systematic theology. Concludes with a look at Islamic resurgence movements and their place in the contemporary world.

**HIST3043 History of the Modern Middle East (Irregular)** Examines the history of the Islamic Middle East from the rise of the Ottoman and Safavid Persian empires up to World War I and then concludes with the issues and patterns of 20th century Middle Eastern political and socio-economic life. Topics include Islam and politics, Arab nationalism, Western imperialism, the Arab-Zionist conflict, petroleum politics, and modernization vs. traditionalism.

**HIST3063 Military History (Irregular)** Survey of the basic principles and problems of strategy, tactics, and military organization from Alexander the Great to the present. Special attention will be given to the operation of these factors in the American Revolution, the Napoleonic Wars, the American Civil War, and World War II.

**HIST3083 Women and Christianity (Irregular)** From Paul to the mystics of the late medieval church, this course considers women's religious expression, symbolic action, interaction with holy men, and their relationship with the ecclesiastical hierarchy. Other important questions include women's institutional subordination opportunities for autonomous action.

**HIST3203 Colonial Latin America (Odd years, Fa)** An introduction to the social, cultural, political and economic formation of Latin America, during the period from 1492 to the movements for independence.

**HIST3213 Modern Latin America (Even years, Sp)** An

investigation of the varying courses of modernization in Latin America, covering popular revolution, urban populism and military dictatorship.

**HIST3223 Violence and Conflict in Latin American History (Even years, Fa)** This course analyzes the history of Latin America since European conquest through the prism of violence and social conflict. Using films and literature, as well as historical texts, the course examines themes of nationalism, civil war, banditry, urbanization, military dictatorships, human rights abuses, and guerrilla insurgencies.

**HIST3233 African American History to 1877 (Fa)** The course will study the African beginnings, the Caribbean and Latin American influences, and the African American early struggle to survive slavery in the new world, and the continuing social, political, and economic quest to become a first class citizen in American society until Reconstruction, 1492-1877.

**HIST3243 African American History Since 1877 (Sp)** The course will study the major social, political, and economic issues relating to the African American experience beginning with the late post-Reconstruction period and will include, all of the major personalities and influences in the Civil Rights Movement, from 1877 to the present.

**HIST3253 The History of Sub-Saharan Africa (Fa)** Sub-Saharan African history from the 18th century to the present, with emphasis on the impact of the slave trade, colonization, Independence, and contemporary issues of the post-colonial period. Examination of the ways Africans experienced change in terms of culture, society, economics, gender, religion, politics, and labor.

**HIST3263 History of the American Indian (Fa)** Survey of North American Indian history from their arrival include pre-Columbian Indian history, the interaction of Indian and white societies, U.S. Government policy, and the role of Indians in modern American culture.

**HIST3323 The West of the Imagination (Irregular)** The changing image of the American West from the colonial period to the present and how popular impressions have reflected national attitudes and values. Special attention given to the West's portrayal in folklore, literature, art, films, and television.

**HIST3383 Arkansas and the Southwest (Sp, Fa)** Political, economic, social, and cultural development of Arkansas from the coming of the Indian to the 20th century, with special emphasis on Arkansas as a national and regional component.

**HIST3443 Modern Imperialism (Odd years, Fa)** Examines the causes, nature, and consequences of modern imperialism. The histories of five different empires are studied and compared to give an overview of the phenomenon.

**HIST3453 Modern Terrorism (Irregular)** Examines the historical foundations and course of modern terrorism, from the French Revolution to the present. Special attention is given to the Irish Republican Army, Baader Meinhoff Gang (Red Army Faction), the American militia movement, and al-Qaeda.

**HIST3473 Palestine and Israel in Modern Times (Irregular)** History of 19th-20th Century Palestine, Zionism and the founding of modern Israel, and the Palestine-Israel conflict in local and regional perspective.

**HIST3503 Far East in Modern Times (Irregular)** Introduction to fundamental aspects of Chinese, Japanese, Korean, and Vietnamese history since about 1860.

**HIST3533 World War II (Sp)** Study of the causes, conduct and consequences of the Second World War.

**HIST3583 The United States and Vietnam, 1945-1975 (Fa)** A survey and analysis of the Vietnam War with special emphasis on its impact on American and Indochinese society.

**HIST3593 The Unraveling of America: Life in the 1960s (Irregular)** A study of the main themes and dominant forces shaping American history during the 1960s; social and cultural as well as political and economic history are emphasized. Topics include the civil rights movement, the Great Society and the Vietnam War as well as the counter-culture, rock music and the re-emergence of feminism.

**HIST3923H Honors Colloquium (Irregular)** Treats a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in history).

**HIST3973H Honors Methods (Sp)** A practical introduction to historical research and writing. Examines research methods and current theories of interpreting and evaluating the past. Prepares students for honors thesis development and writing. Required for and restricted to history honors students. Prerequisite: Junior standing as honors history major.

**HIST398V Special Topics (Sp, Su, Fa) (1-3)** Historical topics which are not usually presented in depth in regular courses.

**HIST399VH Honors History Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Junior standing. May be repeated for up to 12 hours of degree credit.

**HIST4003 Greece and the Ancient Near East (Irregular)** An introduction to the origins of civilization in the ancient Near East and Greece. Emphasis placed upon the development of agriculture and

cities, Hebrew religious ethics, and Greek culture, political institutions, and thought.

**HIST4013 Alexander the Great and the Hellenistic World (Irregular)** A survey of the achievements of Alexander and the culture of the new world he created. The personality and career of Alexander are examined as well as the rich diversity of the Hellenistic world: trade with India, religious syncretism, and the development of Hellenistic science and philosophy.

**HIST4023 The Roman Republic and Empire (Even years, Fa)** An introduction to Rome's cultural development from its origins as a small city state in the 8th century B.C. to its rule over a vast empire extending from Scotland to Iraq. Emphasis is placed upon the causes of Roman expansion during the Republic, the urbanization and Romanization of Western Europe, and the persecution and spread of Christianity.

**HIST4043 Late Antiquity and the Early Middle Ages (Even years, Fa)** This course examines the political, spiritual, intellectual, and social-economic developments of European history, c. 300-1000 CE. Special topics include the Christianization of the late Roman Empire and Byzantium, as well as the formation of Celtic and Germanic Kingdoms in the West.

**HIST4053 Late Middle Ages (Odd years, Sp)** This course examines the political, social-economic, intellectual, and spiritual developments of European history, c. 1000-1400 CE. Special topics include monasticism, sacral kingship, the crusades, and the medieval university.

**HIST4073 Renaissance and Reformation, 1300-1600 (Even years, Fa)** Examines the history of Europe from the end of the Middle Ages through the Renaissance to the Reformation and Counter-Reformation. Special attention is paid to changes in popular piety, political thought, religious representation, and the discovery of the New World.

**HIST4083 Early Modern Europe, 1600-1800 (Odd years, Sp)** Begins with the upheaval of the reformation, moves through the crisis of the 17th century and culminates with the democratic revolution of the 18th century. Examines the consolidation of the European state system, the propagation of modern science, discovery of overseas worlds, and the advent of the Industrial Revolution.

**HIST4093 The History of African Americans and Social Justice (Even years, Fa)** Explores how the United States has extended social justice to African Americans during the nation's history. Examines social justice for blacks and the impact of historic policies and practices on black life today.

**HIST4103 Europe in the 19th Century (Irregular)** European history from the Congress of Vienna to the outbreak of World War I, with emphasis on political and diplomatic history.

**HIST4113 Twentieth Century Europe, 1898-1939 (Irregular)** Background and impact of World War I to the outbreak of World War II.

**HIST4133 Society and Gender in Modern Europe (Odd years, Sp)** Changing values and attitudes toward childhood, family life, sexuality, and gender roles in Europe from the Renaissance to the present. The social impact of the Industrial Revolution, urbanization, demographic change, and the two world wars.

**HIST4143 Intellectual History of Europe Since the Enlightenment (Even years, Fa)** A survey of the major developments in European thought and culture since the emergence of Romanticism. Topics include Romanticism, Darwinism, Marxism, and Modernism.

**HIST4153 Modern Ireland, 1798-1948 (Irregular)** Examines the course of Irish history from the 1798 United Irishmen rebellion to the 1948 declaration of the Republic of Ireland. Special attention is given to Catholic emancipation, the Great Famine, the Home Rule movements, the Irish War of Independence, and the Emergency (Second World War).

**HIST4163 Tudor-Stuart England, 1485-1714 (Even years, Sp)** Examines the history of the British Isles from the ascension of Henry VII and the Tudor dynasty until the close of the Stuart Era in 1714. Special attention is given to the English Reformation, the Elizabethan years, the 17th Century Revolutions, and the birth of an overseas Empire.

**HIST4173 The Latin American City (Irregular)** This course examines the social, political, and cultural aspects of the modern Latin American city from an interdisciplinary perspective. The course includes an introduction to urban studies concepts, and each semester is organized around a specific set of case studies.

**HIST4183 Great Britain, 1707-1901 (Even years, Fa)** Examines the history of the British Isles from the 1707 Act of Union between Scotland and England until the death of Queen Victoria in 1901. Special attention is given to the spread of Empire, industrialization, and the political, social, and cultural aspects of the Georgian and Victorian Eras.

**HIST4193 Great Britain, 1901-2001 (Odd years, Sp)** Examines the history of the British Isles from the death of Queen Victoria in 1901 to the reelection of Prime Minister Tony Blair in 2001. Special attention is given to the collapse of the British Empire, the birth of the welfare state, and the challenges inherent in the decline of British

world power.

**HIST4213 The Era of the French Revolution (Odd years, Fa)** France from the salons of the Enlightenment to the Napoleonic Wars. The French Revolution will be explored in terms of politics and

personalities, ideas and symbols, class and gender relations, and violence and terror.

**HIST4223 France Since 1815 (Even years, Sp)** Survey of French history from the overthrow of Napoleon to the 5th Republic, with emphasis on French politics, society, and culture.

**HIST4243 Germany, 1789-1918 (Even years, Fa)** Survey of Germany from Age of Absolutism to collapse of the Hohenzollern monarchy with emphasis upon political, social, and economic developments.

**HIST4253 History of Germany, 1918-1949 (Irregular)** Survey of Germany from advent of the Weimar Republic to 1949 with emphasis upon the failure of democratic government in the 1920s, the National Socialist dictatorship, and the division of Germany into two separate states.

**HIST4263 Independence and Africa Today (Sp)** Examines the last half-century of Africa's history, focusing on the last few decades. Introduction of Africa's colonial past, revolutions and struggles for independence. Review of African development in the post-colonial and contemporary era, successes and failures of independent Africa, and the challenges the continent faces today.

**HIST4283 Russia to 1861 (Fa)** Study of the political, social and cultural development of Russia through the Napoleonic invasion.

**HIST4293 Russia Since 1861 (Sp)** Survey of political, cultural and intellectual trends in modern Russia with emphasis upon the Revolutions of 1917, the Soviet Union, and its successor states.

**HIST4313 Islamic Theology and Philosophy, 650-1700 (Irregular)** Doctrines and main figures in Islamic theology and philosophy from the origins of Islam through the seventeenth century C.E.

**HIST4333 Modern Islamic Thought (Irregular)** Main currents in Islamic theology and political philosophy from the Ottoman Empire to the end of the twentieth century.

**HIST4353 Middle East, 600-1250 (Even years, Fa)** An examination of the origins of modern Middle Eastern societies-Arabic, Turkish, and Persian-with emphasis upon the development of the Islamic faith and culture.

**HIST4363 The Middle East since 1914 (Irregular)** Middle East since 1914 addresses European colonialism, the rise of new social elites, independence, revolution, globalization, economic self-determination, persistent regional conflicts and ongoing battles over "cultural authenticity".

**HIST4373 Mongol & Mamluk Middle East 1250-1520 (Even years, Sp)** An examination of Egypt, the Fertile Crescent, and Iran in the period of the Turco-Mongol military elites. Special attention given to the rise of slave and free governments and their roles in shaping Middle East political and social patterns.

**HIST4383 The American Civil Rights Movement (Irregular)** Introduction to the history and development of the civil rights movement in the United States. (Same as AAST 4383)

**HIST4393 The Ottoman Empire and Iran 1300-1722 (Odd years, Sp)** An examination of Ottoman government and society in the (Classical Period) as well as a survey of Iranian history from 1300 to 1722. Special attention given to the Ottoman ruling structure, religious-legal establishment, and Ottoman conquests in the Balkans and Arab world.

**HIST4413 New Women in the Middle East (Irregular)** This course covers the transformation of social and cultural roles of women in the Middle East since the 19th Century. Emphases include political emancipation, religious reformation, artistic representation, and gendered re-definition.

**HIST4433 Social and Cultural History of the Modern Middle East (Irregular)** An analysis of Middle East history in the 17th-20th centuries which focuses on the social transformation of urban and rural life. Particular emphasis is given to the roles of economics, genealogy, art, and popular culture.

**HIST4463 The American Frontier (Odd years, Fa)** American westward expansion and its influence on national institutions and character. Emphasis on the pioneer family and the frontier's role in shaping American society, culture, economy, and politics. Topics include exploration, the fur trade, the cattle kingdom and the mining, farming, and military frontiers.

**HIST4483 African American Biographies (Irregular)** Introduction to the history and intellectual development of famous and not-so-famous African Americans. (Same as AAST 4483)

**HIST4493 Religion in America to 1860 (Irregular)** History of religion in early America, primarily from a social and cultural perspective. Topics will include region, social class, growth of institutions, slavery, print culture, and social reform in traditions including Protestantism, West African religion, Catholicism, Native American religion, and Judaism.

**HIST4503 History of Political Parties in the United States,**

**1789-1896 (Even years, Fa)** Origin and development of the American party system from the implementation of the constitution to the election of McKinley. (Same as HIST 4483, PLSC 4303)

**HIST4513 History of Political Parties in the United States Since 1896 (Odd years, Sp)** Response of the party system to America's emergence as an industrial nation and world power from the election of 1896 to present. (Same as PLSC 4313)

**HIST4533 American Social and Intellectual History to 1865 (Even years, Fa)** Survey of significant ideas and institutions from Colonial times through the Civil War with emphasis upon religious, educational, literary, and scientific developments.

**HIST4543 American Social and Intellectual History Since 1865 (Odd years, Sp)** Survey of thought and society since the Civil War.

**HIST4563 The Old South, 1607-1865 (Odd years, Fa)** Survey of the political, social, and economic development of the antebellum South.

**HIST4573 The New South, 1860 to the Present (Even years, Fa)** Survey of the development of the Civil War and postwar South to the present.

**HIST4583 Arkansas in the Nation (Sp)** Designed to provide advanced undergraduate and graduate students with a comprehensive understanding of the full sweep of Arkansas history. The focus will be on social, economic and political history, and historiography.

**HIST4603 U.S. Labor History to 1877 (Odd years, Fa)** Examines the changing nature of work in U.S. history from 1607 until 1877 including the ways that workers--individually and collectively--understand the meanings of their labor and to the ways that notions of class, gender, ethnicity, and race inform these understandings.

**HIST4613 Colonial America to 1763 (Irregular)** Political, economic, and social history of colonial development from the time of contact to the Treaty of Paris, with primary, but not exclusive, emphasis upon Anglo-America.

**HIST4623 Revolutionary America, 1763 to 1801 (Irregular)** Political, economic, and social history of Revolutionary and post-Revolutionary America and the evolution of the new nation, with a particular emphasis upon the emergence on constitutional traditions.

**HIST4643 Early American Republic, 1801-1828 (Irregular)** History of the early United States emphasizing social and cultural perspectives. Topics addressed will include westward expansion, slavery, religion, and economic change.

**HIST4653 Antebellum America, 1828-1850 (Irregular)** History of antebellum U.S. emphasizing social and cultural perspectives. Topics addressed will include slavery, religion, gender, the market economy, regionalism, and political developments.

**HIST4663 Rebellion to Reconstruction, 1850-1877 (Irregular)** A survey of political, social, and economic issues from the late antebellum period through Reconstruction. Emphasis is placed on the causes of the Civil War and the problems of postwar America. A brief examination of the Civil War is included.

**HIST4673 The American Civil War (Fa)** An intensive study of the political, social, military, and economic aspects of the American Civil War period.

**HIST4683 The Business Corporation in American Life and Thought (Irregular)** The legal, social and political background of the business corporation, seeking explanations as to why the corporation became the dominant form of economic organization by the late nineteenth century. The course will also examine the social and political effects of corporate power.

**HIST4703 Emergence of Modern America, 1876-1917 (Odd years, Fa)** A survey of the impact of the Industrial Revolution, Imperialism, and progressivism upon American life and institutions.

**HIST4723 America Between the Wars, 1917-1941 (Irregular)** The impact of World War I, the 1920s, and the Great Depression upon American society and culture.

**HIST4733 Recent America, 1941 to the Present (Irregular)** A general survey of American history since World War II with emphasis upon the presidency, reform movements, the Cold War, and cultural developments.

**HIST4753 Diplomatic History of the United States, 1776-1900 (Even years, Fa)** Survey of American foreign relations from the American Revolution through the Spanish-American War. Principal topics include isolationism, freedom of the seas, manifest destiny and continental expansion, overseas expansion, and the diplomacy of war and peace. Emphasis on the relationship between domestic politics and foreign affairs. Prerequisite: HIST 2003.

**HIST4763 Diplomatic History of the United States, 1900-1945 (Odd years, Sp)** America's development as a world power. The course examines U.S. relations with Europe, Latin America, and East Asia, plus America's first approach to the Middle East. Particular emphasis is placed on America's involvement in World War I and World War II. Prerequisite: HIST 2013.

**HIST4773 Diplomatic History of the US, 1945 to Present (Odd years, Fa)** U.S. involvement in world affairs since WWII. The Cold War from an international perspective, including strategies, nuclear deterrence, conflicts, economic developments, cultural

relations among allies and adversaries. Post-Cold War scenarios, including war on terrorism.

**HIST4783 History of Modern Mexico (Odd years, Sp)** This course examines the history of Mexico from the wars of independence to the present. Emphasis will be placed on the turbulent nineteenth century and the Mexican Revolution. Themes covered include colonial legacies, national identities, popular culture, emigration, and relations with the United States.

**HIST4793 Colonial India, 1758-1948 (Irregular)** Examines the course of Indian history from the 1758 Battle of Plassey to eventual independence from Great Britain in 1948. Special attention is given to India's place within the British Empire, particularly the East Indian Company, the Indian Mutiny, the Raj, the rise of Gandhi, and India's independence movement.

**HIST4813 History of China to 1644 (Fa)** (Formerly HIST 4313) A history of pre-modern China, including the study of Confucianism, Taoism and Buddhism.

**HIST4823 Modern China (Sp)** Survey of Chinese culture, society, government and diplomacy between 1644 and the present.

**HIST4843 Modern Japan (Irregular)** (Formerly HIST 4843) Survey of Japanese history since 1859 to the downfall of Tokugawa shogunate through the two world wars to the rise of an economic superpower. Emphasis is placed on Japanese economic, social, and political questions, including their successes and costs.

**HIST4893 Senior Capstone Seminar (Fa)** Required for all history majors. Examines research methods and current theories of interpreting and evaluating the past. Emphasizes skills of analysis, synthesis, and integration. Students produce a primary source-based research paper. A grade of a B or better will satisfy the Fulbright senior writing requirement. Prerequisite: History major; senior standing.

**HIST4943 U.S. Labor History, from 1877-present (Even years, Sp)** This course will examine the changing nature of work in U.S. history from 1877 until the present. It will pay particular attention to the ways that workers--individually and collectively--understand the meanings of their labor and to the ways that notions of class, gender, ethnicity, and race inform these understandings.

**HIST498V Senior Thesis (Sp, Su, Fa) (1-6)**

**HIST5023 Historical Methods (Fa)** Practical introduction to historical research and writing. Consists of lecture, library reading, and class criticism of research papers. Prerequisite: Graduate standing.

**HIST5043 Historiography (Irregular)** Survey of the history of historical writing and a study of the important schools and historical interpretation. Prerequisite: Graduate standing.

**HIST5053 Reading Seminar in Asian History (Irregular)** Concentrated reading in selected specialized areas of Asian history. Prerequisite: Advanced graduate standing. May be repeated for up to 6 hours of degree credit.

**HIST506V Readings in European History (Irregular) (1-6)** Prerequisite: Graduate standing.

**HIST507V Readings in American History (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**HIST508V Research Problems in European History (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**HIST509V Research Problems in American History (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**HIST5103 Reading Seminar in American History (Irregular)** Historiographical and bibliographical study of special areas of U.S. history, such as the Age of Jackson, the Civil War, etc. Prerequisite: Graduate standing. May be repeated for up to 3 hours of degree credit.

**HIST510V Readings in Latin America History (Irregular) (1-6)**

**HIST511V Research Problems in Latin American History (Irregular) (1-6)**

**HIST5123 Research Seminar in American History (Irregular)** Research projects in selected fields of American history, such as the Civil War, the Age of Jackson, etc. Prerequisite: Graduate standing. May be repeated for up to 3 hours of degree credit.

**HIST512V Readings in African History (Irregular) (1-6)**

**HIST5133 Reading Seminar in European History (Irregular)** Historiographical and bibliographical study of special periods in European history, such as the Roman Empire, the late Middle Ages, the French Revolution, etc. Prerequisite: Graduate standing. May be repeated for up to 3 hours of degree credit.

**HIST513V Research Problems in African History (Irregular) (1-6)**

**HIST5143 Research Seminar in European History (Sp, Su, Fa)** Research projects in selected fields of European history, such as the French Revolution, humanism, etc. Prerequisite: Graduate standing. May be repeated for up to 3 hours of degree credit.

**HIST514V Readings in Middle Eastern History (Irregular) (1-6)**

**HIST5153 Reading Seminar in British History (Irregular) (3-6)** Historiographical and bibliographical study of selected periods

of British history.

**HIST515V Research Problems in Middle Eastern History (Irregular) (1-6)**

**HIST5163 Research Seminar in British History (Irregular)** Research projects in selected fields of British history. May be repeated for up to 6 hours of degree credit.

**HIST517V Readings in Asian History (Irregular) (1-6)** Prerequisite: Graduate standing.

**HIST519V Readings in Ancient Near Eastern History (Irregular) (1-6)** Prerequisite: Graduate standing.

**HIST520V Research Problems in Ancient Near Eastern History (Irregular) (1-6)** Prerequisite: Graduate standing.

**HIST5213 Reading Seminar in Middle Eastern History (Irregular)** Historiographical and bibliographical study of special areas of Middle Eastern history. Prerequisite: Graduate standing. May be repeated for up to 3 hours of degree credit.

**HIST5233 Research Seminar in Middle Eastern History (Irregular)** Research projects in selected fields of Middle Eastern history. Prerequisite: Graduate standing. May be repeated for up to 3 hours of degree credit.

**HIST5313 Reading Seminar in Latin American History (Irregular)** Historiographical and bibliographical study of special areas in Latin American history. Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**HIST5323 Research Seminar in Latin American History (Irregular)** A research seminar for the production of a major research project in Latin American history. Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**HIST5413 Reading Seminar in African History (Irregular) (3-6)** Historiographical and bibliographical study of selected periods and/or topics in African history. Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**HIST5423 Research Seminar in African History (Irregular) (3-6)** A seminar for the production of a major research project in selected fields of African history. Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**HIST600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**HIST700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Candidacy. May be repeated for up to 18 hours of degree credit.

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**Health Sci, Kins, Recr (HKRD)**

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**HKRD5353 Research in Health Science, Kinesiology, Recreation and Dance (Sp, Su, Fa)** Methods and techniques of research in health education, physical education and recreation including an analysis of examples of their use and practice in their application to problems of interest to the student.

**HKRD5873 Leadership in HKRD Services (Su)** Considers research, theory, and practical applications of leadership principles utilized in the provision of HKRD services. Focus is on motivation, attitude, communication, group dynamics, and problem solving.

**HKRD5883 Sports Facilities Management (Sp)** Considers basic elements and procedures in the planning, design, construction, operation, and maintenance of sport facilities; management considerations in conducting various types of events.

**HKRD5893 Public and Private Finance in HKRD (Fa)** Develops an understanding of both public and private finance management for students in public and private management positions. Provides an understanding of the budgeting processes and techniques used in obtaining and controlling funds, including private sector finance problems in areas of credit, pricing, indexing, and debt management.

**HKRD6133 Issues in HKRD (Irregular)** A review of the significant social, demographic, behavioral, developmental, and technological issues that influence health, kinesiology, and recreation programs. Pre- or Corequisite: for doctoral level students only.

**HKRD6233 Management in HKRD (Irregular)** Deals with principles, procedures, relationships, problems, and current practices in the supervision of health education and kinesiology. Includes management of facilities, programs, personnel, and processes.

**HKRD689V Directed Research (Sp, Su, Fa) (1-6)** Laboratory investigations, in basic and applied research.

**HKRD699V Seminar (Sp, Su, Fa) (1-3)** May be repeated for up to 3 hours of degree credit.

**HKRD700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Candidacy.

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**Health Sciences (HLSC)**

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**HLSC1002 Wellness Concepts (Sp, Fa)** Interrelationship of mental, emotional, physical, social, and spiritual aspects of functioning to optimal health and wellness; implications for education about wellness in the schools and for adult living are provided.

**HLSC1103 Personal Health and Safety (Sp, Fa)** Health and safety problems with emphasis on the promotion of individual health and safety.

**HLSC1203 Prevention of Drug Abuse (Fa)** Provides an overview of drugs of use and abuse in society. Also assists the student in evaluating drug abuse prevention approaches for public, private, or community settings.

**HLSC1303 Introduction to Human Sexuality (Sp)** An examination of human sexuality with a critical analysis of male and female attitudes and values affecting self-understanding and gender identity.

**HLSC2101 Special Topics (Sp, Fa)** Examination and application of health promotion concepts based on individualized health hazard appraisal. (Not to replace content courses leading to teacher certification in health education). May be repeated for up to 5 hours of degree credit.

**HLSC2613 Foundations of Community Health (Sp)** History and philosophy of health education discipline; organization and administration of health education programs; curriculum development and evaluation of educational efforts; and student observation in school and non-school settings.

**HLSC2662 Terminology for the Health Professions (Sp, Fa)** Emphasis is on word roots and combined forms of words describing various facets of health and disease. Descriptive definitions with application of practical significance included for the health professional.

**HLSC310V Readings in Health Science (Irregular) (1-3)** Synthesis and critical analysis of current literature in the health sciences. May be repeated for up to 12 hours of degree credit.

**HLSC3613 Methods and Materials in Health Education and Safety (Irregular)** Methods and materials; planning and organizing instruction; preparation of teaching units. Prerequisite: Junior standing.

**HLSC3633 First Responder-First Aid (Sp, Su, Fa)** Prepares persons to administer cardiopulmonary resuscitation and emergency aid to victims of serious bleeding, poisoning, shock, fracture, and other forms of injury until emergency medical services personnel arrive at the scene.

**HLSC3643 Community Health Planning and Promotion (Even years, Fa)** Emphasis on community analysis; defining and verifying community health problems; establishing program goals; defining and assessing health behaviors; formulating educational goals, objectives, methods, and activities; promoting programs; and designing program evaluation.

**HLSC3663 Principles and Practice of Mental Health Promotion (Odd years, Fa)** Understanding and practicing the principles of sound mental health are key elements in achieving high level wellness. This course encourages students' exploration of the mental dimensions of holistic health and presents strategies to achieve a more healthful balance in life.

**HLSC3673 Teacher Drug Education (Fa)** Specifically for educators; provides an overview of drugs of use, misuse, and abuse in society, and assists the educator in developing a sequential drug education program in public, private, or community educational settings.

**HLSC3683 Health Care Consumerism (Even years, Sp)** Study of products and services provided by the health care delivery system; an analysis of those components lacking scientific credibility, yet promoted for the maintenance or restoration of health status.

**HLSC3683H Honors Health Care Consumerism (Even years, Sp)** Study of products and services provided by the health care delivery system; an analysis of those components lacking scientific credibility, yet promoted for the maintenance or restoration of health status.

**HLSC404V Community Health Preceptorship (Sp, Su, Fa) (6-12)** Designed to provide the student with an extended work experience in a selected community health program. The student works under college supervision with a professional in the health care delivery field. Prerequisite: Senior standing.

**HLSC4603 Application of Health Behavior Theories in Health Education (Odd years, Sp)** Understanding the reasons for health behavior is vital for the health education professional. It is necessary to assist in the development of services and programs that are likely to move an individual from an unhealthy behavior to one that is more appropriate for a healthy lifestyle. This course surveys the major health behavior theories used in health education and applications of the theories will be used in the class.

**HLSC4613 Principles of Epidemiology (Fa)** Distribution and patterns of disease or physiological conditions within populations; an examination of the nature of epidemiological research. Prerequisite: Senior standing and BIOL 2013 and BIOL 2011L. May be repeated for up to 6 hours of degree credit.

**HLSC4623 Human Diseases (Fa)** (Formerly HLSC 3623) An examination of the variety, behavior, distribution, and management of both infectious and noninfectious diseases in human populations. Prerequisite: BIOL 1603 (or BIOL 1543 and BIOL 1541L).

**HLSC5353 Health Counseling (Fa)** A review of the role and function of the health counselor including a focus on problem solving approaches for coping with daily problems of living, decision making, and life style planning.

**HLSC5543 Contemporary Issues in Human Sexuality (Irregular)** In-depth analysis of the social, biological, and behavioral factors associated with the development of one's sexuality.

**HLSC5563 Public Health: Practices and Planning (Sp)** Acquaints the student with the structure, functions, and current problems in public health and with the role of education in public health. Prevention and control practices and planning will be emphasized.

**HLSC5573 Principles of Health Education (Fa)** Current trends, basic issues, controversial issues, and fundamental principles of health education.

**HLSC5623 Health Planning (Even Years, Sp)** Emphasis is on examination of health planning processes, principles, and concepts. Methods for health planning agencies, issues in comprehensive health planning, and analysis of decision making steps for program implementation will be addressed.

**HLSC5633 Health Services Administration (Irregular)** Emphasis is on an examination of administrative factors related to health services. Administrative and professional authority, boards, consumers, delivery of services, federal role, and cost containment will also be addressed.

**HLSC574V Internship (Irregular) (1-6)** May be repeated for up to 6 hours of degree credit.

**HLSC589V Independent Research (Sp, Su, Fa) (1-6)** Development, implementation, and completion of graduate research project. Prerequisite: M.S. degree in Health Science and HPER 5353 and EDFD 5393.

**HLSC605V Independent Study (Sp, Su, Fa) (1-6)** Provides students with an opportunity to pursue special study of education problems. May be repeated for up to 6 hours of degree credit.

**HLSC6333 Health Behavior Research (Even years, Fa)** A review of human behavior and its relationship to health and well being. Focuses on contemporary health behavior research and instrumentation.

**HLSC6553 Environmental Health (Odd years, Fa)** An analysis and evaluation of the various environmental factors that influence our health. Causes of problem factors are identified and solutions proposed for improving environmental conditions.

**HLSC6733 Health and the Aging Process (Odd Years, Sp)** An overview of the health-related issues facing elderly populations with in-depth study of the biological and behavioral changes associated with aging.

**HLSC674V Internship (Sp, Su, Fa) (1-3)** Provide Ph.D. students with an individualized college teaching experience in collaboration with a faculty mentor. Enrollment concurrent with residency. Prerequisite: admission to the Ph.D. in Health Science degree program. May be repeated for up to 3 hours of degree credit.

**HLSC6803 Health Communication Theory, Research and Practice (Odd years, Sp)** This course is designed to acquaint you with the role of communication in health education and with basic principles and practices in interpersonal, group, and mass communication. Health communication theory will be discussed in the first part of the semester, followed by important research in the area of health communication, and finally putting to practice the material will be the terminal experience for the course.

**HLSC6833 Principles of Epidemiology II (Even years, Sp)** Provides students with knowledge and skills necessary to design, conduct, and interpret observational epidemiological concepts, sources of data, prospective cohort studies, retrospective cohort studies, case-control studies, cross-sectional studies, methods of sampling, estimating sample size, questionnaire design, and effects of measurement error. Prerequisite: EDFD 5393 or EDFD 6403.

**HLSC699V Seminar (Irregular) (1-3)** Discussion of selected topics and review of current literature in the health sciences. Prerequisite: Advanced graduate standing. May be repeated for up to 3 hours of degree credit.

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### Honors Education (HNED)

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**HNED3001H Honors Education Thesis Tutorial (Sp, Su, Fa)** Designed to provide the foundation for the Honors Thesis. Students and faculty tutors work "one-on-one" exploring a specific topic which has been agreed upon by the student and the professor. Prerequisite: Honors candidacy. May be repeated for up to 6 hours of degree credit.

**HNED3923H Honors Education Seminar (Irregular)** Special topics or issues in education for the Honors student. Prerequisite: Honors candidacy.

**HNED400VH Honors Education Thesis/Project (Sp, Su, Fa) (1-3)** Prerequisite: Honors candidacy and HNED 3001H.

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### Horticulture (HORT)

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**HORT1103 Plants in the Home Environment (Fa)** A course describing the aesthetic, nutritional and health value, and other importance of plants to humans. The course will highlight the use and importance of plants and gardening through the ages, study significant gardens to humankind, and introduce students to using

plants to their benefit. The use of color, texture, aroma and flavor in the home and landscape will be presented. Basic home gardening, plant care and use will be discussed and practiced.

**HORT2003 Principles of Horticulture (Sp, Fa)** A course introducing students to the biological and technologies underlying the propagation, production, handling and use of horticultural crops, turf and landscape plants. Students will be introduced to the various disciplines and commodities of horticulture. The use of plants for the benefit of humankind because of their aesthetic and nutritional value will be explored. Previous instruction in Plant Science, Plant Biology, or general Botany is strongly encouraged. Lecture 2 hours, laboratory 2 hours, drill 1 hour per week. Corequisite: Lab component.

**HORT2303 Introduction to Turfgrass Management (Fa)** An introductory course in turfgrass management emphasizing turfgrass growth, adaptation, and management. Methods for establishment, fertilization, mowing, cultivation, irrigation, and pest management are presented, and their impact on culture of lawns, golf courses, athletic fields, and other managed turf areas discussed.

**HORT3103 Woody Landscape Plants (Fa)** Identification, climatic adaptation and landscape design values of woody ornamental trees, shrubs and vines. Lecture 2 hours per week. Corequisite: Lab component.

**HORT3113 Herbaceous and Indoor Plant Materials (Odd years, Sp)** Identification, culture, and use of annuals, perennials in landscapes and foliage plants in interiors. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component.

**HORT3303 Vegetable Crops (Even years, Sp)** General course in vegetable crops with attention to the principles underlying methods of production and handling related to yields and quality of the products. Lecture 2 hours, laboratory 2 hours per week. Prerequisite: HORT 2003 and CSES 2203.

**HORT3403 Commercial and Residential Turfgrass Management (Even years, Sp)** Cultural and management practices of commercial and residential lawns. Principles and practices of mowing, fertilizing, irrigating, and control of weed, disease, and insects. Identification of turfgrass; equipment selection. Corequisite: Lab component. Prerequisite: HORT 2303.

**HORT3901 Horticultural Career Development (Sp)** A course which presents concepts necessary for developing a career and becoming a professional in horticulture industries or businesses. Concepts of goal setting, effective communication and interpersonal skills, behaviors and performance, portfolio and resume, development and job hunting skills will be presented.

**HORT400V Special Problems (Sp, Su, Fa) (1-6)** Original investigations on assigned problems in horticulture. Prerequisite: Junior standing.

**HORT401V Special Topics in Horticulture, Turf or Landscape (Irregular) (1-6)** Topics related to horticulture, turfgrass or landscape science or management not covered in other courses or a more intensive study of a specific topic.

**HORT402V Horticulture Judging and Competition Activity (Irregular) (1-6)** Training for and participation on horticultural identification, judging and competitive teams. Prerequisite: HORT 2003. May be repeated for up to 4 hours of degree credit.

**HORT4033 Professional Landscape Installation and Construction (Even years, Fa)** Principles and practices involved in landscape installation and construction. Topics covered include sequencing construction activities, protecting existing trees, landscape soils, selecting plants, planting and transplanting plant materials, wood construction, cement and masonry construction, and low-voltage lighting. Lecture 3 hours per week. Preparatory training in agribusiness or business is suggested. Prerequisite: HORT 2003 and HORT 3103.

**HORT4043 Professional Landscape Management (Odd years, Fa)** Principles and practices of landscape management and maintenance. Topics include low maintenance and seasonal color design, pruning and hazard tree management, water and fertilizer management, pesticide use, and other maintenance activities. Basic elements of marketing, specifications and contracts, estimating, personnel management, and equipment selection and acquisition relevant for landscape services will be introduced. Preparatory training in agribusiness or business is suggested. Prerequisite: HORT 2003 and HORT 3103.

**HORT4103 Fruit Production Science and Technology (Odd years, Sp)** The management technologies and cultural practices of fruit crops including (but not limited to) blueberries, blackberries, raspberries, strawberries, grapes, peaches, and apples will be presented. The underlying scientific principles of crop genetics, nutrition, and physiology will be presented as a basis for making management decisions in fruit crop productions. Corequisite: Lab component. Prerequisites: HORT 2003.

**HORT4403 Plant Propagation (Even years, Sp)** Principles of plant propagation using seeds, cuttings, grafting, budding, layering, and tissue culture. The physiological basis of propagation is described. Knowledge of plant growth and physiology is needed. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab

component.

**HORT4603 Practical Landscape Planning (Even years, Sp)** Ornamental planting design and landscape planning concepts. Preparing planting plans, materials sheets, and cost estimates for residential properties. Prerequisite: HORT 3103.

**HORT462V Horticulture, Landscape, Turf Sciences Internship (Sp, Su, Fa) (1-6)** A supervised practical work experience in a horticulture, landscape design, or turf business or research program to gain professional competence and insight into employment opportunities. May be repeated for up to 6 hours of degree credit.

**HORT4701L Greenhouse Management and Controlled Environment Horticulture Laboratory (Odd years, Fa)** Laboratory involving hands-on experiments designed to demonstrate principles discussed in the lecture section. Includes field trips. Corequisite: HORT 4703.

**HORT4703 Greenhouse Management and Controlled Environment Horticulture (Odd years, Fa)** Operation and management of greenhouses and other controlled environments used in horticultural production. Emphasis on system design and construction, control of light intensity and photoperiod, heating and cooling systems, substrates, mineral nutrition, water quality and irrigation systems. Prerequisite: HORT 2003 and CHEM 1074.

**HORT4801L Greenhouse Crops Production Laboratory (Even years, Sp)** Laboratory involving hands-on experiments designed to demonstrate principles discussed in the lecture section. Includes field trips. Corequisite: HORT 4803.

**HORT4803 Greenhouse Crops Production (Even years, Sp)** Principles and practices of production and marketing of crops commonly grown in controlled environments including flowering containerized herbaceous species, geophytes, annual and perennial bedding plants, hydroponic vegetables and herbs. Prerequisite: HORT 4703.

**HORT4903 Golf and Sports Turf Management (Odd years, Fa)** Turf management techniques for golf courses, and athletic fields including species selection, root-zone construction and modification, fertilization, mowing, irrigation and pest control. Corequisite: Lab component. Prerequisite: CSES 2203 and CSES 2201L and (HORT 2303 or HORT 3403).

**HORT4913 Rootzone Management for Golf and Sports Turf (Odd years, Sp)** An overview of the fundamental concepts of the physical and chemical properties of rootzones as related to construction and turfgrass management. Prerequisite: HORT 2303.

**HORT4921 Golf Course Operations (Even years, Fa)** This course is designed to cover specific aspects of golf course operations that would not be included in traditional turfgrass management courses. Topics will include budgeting, personnel management, tournament setup and operation, dealing with golf club committees, communication, and other relevant topics related to managing a golf course maintenance operation. Prerequisites: HORT 4903.

**HORT5001 Seminar (Sp, Fa)** Review of scientific literature and oral reports on current research in horticulture. May be repeated for up to 4 hours of degree credit.

**HORT503V Special Problems Research (Sp, Su, Fa) (1-6)** Original investigations on assigned problems in horticulture. Prerequisite: Graduate standing.

**HORT5043 Advanced Plant Breeding (Odd years, Sp)** Application of genetic principles to the improvement of crop plants. Presentation of conventional plant breeding methods and special techniques such as polyploidy, interspecific hybridization and induced mutation. Lecture 3 hours per week. Prerequisite: BIOL 2323 and BIOL 2321L (or ANSC 3123 and CSES 4103).

**HORT600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**HORT602V Special Topics in Horticulture (Irregular) (1-3)** Discussion and advanced studies on selected topics in genetics, plant breeding, physiology and culture of horticultural crops. Prerequisite: Graduate standing.

**HORT6033 Genetic Techniques in Plant Breeding (Even years, Fa)** In-depth study of genetic improvement and techniques. Covers both current and classical literature. Topics to be discussed: haploidy, genetic control of pairing, somatic instability, tissue culture and protoplast fusion, and male sterility. Lecture discussion 3 hours per week. Prerequisite: BIOL 2323 and BIOL 2321L (or ANSC 3123 and CSES 4103 or equivalent).

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### Human Resources Development (HRDV)

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**HRDV200V Work Experience (Sp, Su, Fa) (1-30)** Credit by advanced standing examination for job knowledge as measured by advisor approved National Occupational Competency Testing Institute (NOCTI) assessments. May be repeated for up to 30 hours of degree credit.

**HRDV3113 Skills/Strategies in Human Resource Development (Sp)** Addresses the acquisition of professional skills and strategies associated with creating and maintaining adult learning environments. Involves a regular class workshop situation where



skills are practiced and encouraged and a work-based situation where skills are tried and implemented as well as assessed. Pre- or Corequisites: HRDV 3213 and HRDV 4113.

**HRDV3123 Theory and Principles of Needs Assessment and Evaluation in Human Resource Development (Sp, Fa)** Addresses the acquisition of and application of knowledge associated with needs assessment and evaluation of human resources with emphasis on workplace situations. Pre- or Corequisites: HRDV 3213 and HRDV 4113.

**HRDV3133 Theories and Principles of Communication in Human Resource Development (Sp)** This course introduces communication principles and practices in HRD. Coursework emphasizes identifying and developing communication skills that apply to roles, responsibilities, and strategies while exploring how individuals communicate in organizational systems. Both theoretical and practical applications will be included. Pre- or Corequisites: HRDV 3213 and HRDV 4113.

**HRDV3213 Introduction to Human Resource Development (Fa)** Presents the theory and processes associated with human resource development (HRD) used to design and measure interventions in the areas of organization development, personnel training and development, and career development. Students will analyze organizations and study global implications of HRD. Also surveys topics in human resource management (HRM) that distinguish HRM from HRD. Prerequisite: Departmental approval.

**HRDV3403 Employment Law in Human Resource Development (Sp, Su, Fa)** This course covers the major employment law facts and concepts used in human resource development. Applications of the key concepts and facts are emphasized in the class. Knowledge of the employment law facts and concepts and their applications at the workplace is vital for the human resource development professional. Prerequisite: Departmental approval.

**HRDV3503 Workforce Behavior (Su)** The prerequisite for HRDV 450V Experiential Learning, this content examines the psychological impact of work on the individual through a study of organizational culture, job satisfaction, motivation, communication, behavioral styles, and career development. In addition, students will assess individual personality traits, learning styles, work skills, and develop both professional and personal life goals. Prerequisite: Departmental approval.

**HRDV4113 Theory and Principles of Adult Education (Fa)** Focus of study on the concept of individual differences, what they are, and how they affect the learning and teaching of adults. Prerequisite: Departmental approval.

**HRDV4133 Theories and Principles of Group Dynamics in HRD (Sp, Fa)** This course uncovers various theories and principles explaining group behaviors and processes underlying facilitation of group adult learning in the workplace. It is designed to equip learners with knowledge and skills applicable to developing team performance for a competitive organizational advantage. Pre- or corequisites: HRDV 3213 and HRDV 4113.

**HRDV4213 Strategies in Professional Development in HRD (Sp, Fa)** Students are encouraged to examine their own learning processes and professional development in terms of the theories and principles of how adults learn. Methods and strategies for self development and change are discussed. Self-directed lifelong learning strategies that ensure continued growth for professional adult educators/human resource development practitioners will be discussed. Pre- or Corequisites: HRDV 3213 and HRDV 4113.

**HRDV4233 Theories and Principles of Leadership in Human Resource Development (Sp, Fa)** This course provides an introduction to leadership principles and practices in the HRD area, and is intended as a foundation course for students practicing, or who plan to pursue a career in HRD. The emphasis is on identifying/developing HRD leadership skills and exploring various functions/attributes of leadership and their impact on HRD. Both theoretical and practical applications will be included. Pre- or Corequisites: HRDV 3213 and HRDV 4113.

**HRDV450V Experiential Learning (Sp, Su, Fa) (1-30)** This course is limited to persons qualifying for experiential credit to be applied to the Human Resource Development Concentration only. Credit is awarded for documented experiential or occupational learning based on a standardized format as suggested by the Council for the Advancement of Experiential Learning (CAEL). Credit for certain occupational training or professional certifications may also be earned using the American Council on Education (ACE) guidelines. Prerequisite: HRDV 3503. May be repeated for up to 30 hours of degree credit.

**HRDV4603 Applied HRD in Practice I (Sp, Su)** In an actual business/industrial setting, students will apply the theories and best practice presented and examined in the prerequisite course to identify needs in that organization. This course is designed as a journey beginning with the discovery and identification of organization needs and ending in a thoroughly researched and documented presentation of a human resource development intervention. Students will require access to organizational leaders, stakeholders, employees, and

records; and will be expected to develop activities and a final product in alignment with the organization's strategic intent. Prerequisite: HRDV 3213.

**HRDV4613 Applied Theory and Principles of Adult Education in HRD (Su)** In an actual business/industrial setting, the student will observe, participate and apply skills regarding adult learning principles and theory. The focus is on identifying and evaluating leaders in the field of adult education; identifying characteristics of adult learners/teachers and evaluating current issues in the field of adult education. Prerequisite: HRDV 4113.

**HRDV4623 Applied Theory and Principles of Communication in HRD Practice (Su, Fa)** In an actual work setting, the student will apply the theories, principles, concepts and skills studied in the prerequisite course. Prerequisite: HRDV 3133.

**HRDV4633 Applied Skills in HRD Practice (Sp, Su)** In an actual business or industrial setting, the student will study, observe, participate and apply skills and strategies of "good training". The focus is on need for training, application of learning principles, writing instructional objectives and plans, designing active training methods, using visual aids, working with groups, and evaluating training. Prerequisite: HRDV 3113.

**HRDV4643 Applied Theory & Principles of Needs Assessment and Evaluation in HRD Practice (Fa)** This course address the application of knowledge and acquisition of experience associated with needs assessment and evaluation in human resource development with emphasis on workplace situations. Prerequisite: HRDV 3123.

**HRDV4653 Applied Theories and Principles of Group Dynamics in HRD Practice (Sp, Su, Fa)** In an actual business/industrial setting, the student will apply the theories, principles, concepts and skills studied in the prerequisite course and encourage learners to apply these principles within the work setting as a means of advancing their own careers while assisting their organizations to achieve organizational goals, objectives and resulting competitive advantage. Prerequisite: HRDV 4133.

**HRDV4663 Applied Theories and Principles of HRD Leadership in HRD Practice (Sp, Su)** This course is designed to guide students through an in depth process of identifying, analyzing, and synthesizing elements related to developing, articulating, and implementing an organizational vision, mission, and strategic plan. The course focuses students on exploring their own organization's strategic development plan. Prerequisite: HRDV 4233

**HRDV4673 Applied Strategies of Professional Development in HRD Practice (Sp, Su, Fa)** This course is designed to enhance the student's ability to identify personal tendencies affecting team performance, promote the application of adult learning principles by encouraging self-directed learning, and increase ethical awareness in the student's profession. Students will apply concepts from HRDV 4213 Strategies in Professional Development to complete a personal behavioral assessment, develop an individualized personal development plan, and reflect on the role of ethics in their profession. Prerequisite: HRDV 4213.

**HRDV4683 Applied HRD in Practice II (Fa)** The purpose of this practicum is to implement the Human Resource Development intervention designed in the HRDV 4603 Applied HRD in Practice I, where students applied the theories and best practices presented and examined in HRDV 3213 Introduction to HRD to identified needs in students' own organizations. Prerequisite: HRDV 3213. Pre- or Corequisite: HRDV 4603.

**HRDV4693 Applied Strategies in HRD Practice (Su)** In an actual business/industrial setting, the student will study, observe, participate and apply strategies of "good training". The focus is on the identification, evaluation, and synthesis of planning and conducting training in the workplace. Prerequisite: HRDV 3113.

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### Humanities (HUMN)

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**HUMN1144H Honors Roots of Culture to 500 C.E. (Fa)** This course constitutes the first segment of a four-semester interdisciplinary study of the Egyptian Book of the Dead, the Torah, the Roman Colosseum, Hinduism, and Confucianism. Open to first-year Honors students by invitation only. Corequisite: Drill component.

**HUMN1124H Honors Equilibrium of Cultures 500-1600 (Sp)** This course constitutes the second segment of a four-semester sequence focusing on world cultures. Semester 2 may include the interdisciplinary study of Islam, early Byzantium, Gothic architecture, Heian Japan, and the ancient Maya. Open to first-year Honors students by invitation only. Corequisite: Drill component.

**HUMN2003 Introduction to Gender Studies (Sp)** This course explores cultural constructions of gender and sexuality using a variety of media, including literature, film, and architecture.

**HUMN2003H Honors Introduction to Gender Studies (Fa)** This course explores cultural constructions of gender and sexuality using a variety of media, including literature, film, and architecture.

**HUMN2013 Introduction to Buddhism (Fa)** Beginning with an analysis of the fundamental principles that underlie all Buddhist

thought and practice, students will proceed through the major precepts that have historically distinguished the traditions of Southern and Northern Asia. Attention will also be given to Buddhism's spread through Europe and North America in the twentieth century.

**HUMN2114H Honors Birth of Modern Culture 1600-1900 (Fa)** This course constitutes the third segment of a four-semester sequence focusing on world cultures. Semester 3 may include the interdisciplinary study of Renaissance Venice, feudal Japan, Moghul India, Jefferson's Monticello, and Darwinism. Open to second-year Honors students by invitation only. Corequisite: Lab component.

**HUMN2124H Honors Twentieth Century Global Culture (Sp)** This course constitutes the fourth segment of a four-semester sequence focusing on world cultures. Semester 4 may include the interdisciplinary study of the Brooklyn Bridge, the Mexican Revolution, African literature, the Vietnam Memorial, and the atomic age. Open to second-year Honors students by invitation only. Corequisite: Lab component.

**HUMN2213 Introduction to World Religions (Sp)** A survey of the major religions, including—but not limited to—Hinduism, Buddhism, Judaism, Islam, and Christianity.

**HUMN3003 Religions of Asia (Sp)** This course explores the narrative, ritual, and communal practices of Hinduism, Jainism, Buddhism, Taoism, Confucianism, Shinto, Islam, and Sikhism.

**HUMN3163 On Death and Dying (Sp, Su, Fa)** Reviews the theory and humanistic importance of the concepts of death and dying in society. An experimental option and interdisciplinary faculty presenters will be part of the format. Prerequisite: Junior standing. (Same as SCWK 3163)

**HUMN3923H Honors Colloquium (Irregular)** Treats a special topic or issue offered as a part of the Honors Program. Prerequisite: Honors candidacy.

**HUMN425V Colloquium (Irregular) (1-6)** An interdisciplinary, value-oriented discussion course. May be repeated for up to 6 hours of degree credit.

**HUMN425VH Honors Colloquium (Irregular) (1-6)** An interdisciplinary, value-oriented discussion course. May be repeated for up to 6 hours of degree credit.

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### Industrial Engineering (INEG)

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**INEG2101 Principles of Industrial Engineering (Fa)** Considers the past and present roles of the professional industrial engineer and evaluates future trends. Introduces courses to follow and shows their relationship to the systems analysis problems encountered. Corequisite: Lab component.

**INEG2403 Industrial Cost Analysis (Sp)** Use of accounting information for planning and control with emphasis on the engineering viewpoint; introduction to general accounting procedures; principles of cost accounting and other aspects of production costs; budgeting, depreciation, taxes, distribution of profits, securities, sources of corporate capital, interpretation of financial statements, and other related topics. Laboratory required. Corequisite: Lab component.

**INEG3313 Engineering Statistics (Sp, Fa)** Fundamentals of probability and distribution theory with applications to various branches of engineering; experimental procedures and sample size; statistical decision theory including significance testing and estimation. Drill required. Corequisite: Drill component. Prerequisite: MATH 2564.

**INEG3313H Engineering Statistics (Sp, Fa) Fundamentals of probability and distribution theory with applications to various branches of engineering; experimental procedures and sample size; statistical decision theory including significance testing and estimation. Drill required. Corequisite: Drill component. Prerequisite: MATH 2564.**

**INEG3333 Industrial Statistics (Sp, Fa)** Application of statistical techniques to industrial problems; relationships between experimental measurements using regression and correlation theory and analysis of variance models; emphasis on inherent variability of production processes; control chart techniques and the use of exponential and Weibull models in reliability analysis; acceptance sampling procedures. Prerequisite: INEG 3313.

**INEG3413 Engineering Economic Analysis (Sp, Fa)** Economic aspects of engineering, including current economic problems and the treatment of estimates when evaluating alternative courses of action. Methods of selection and replacement of equipment and break-even points of operation; desirability of new processes or projects where asset life, rate of return on investment, and first, fixed, differential, marginal, and sunk costs must be considered. Corequisite: Drill component. Prerequisite: MATH 2554.

**INEG3513 Manufacturing Design and Processes (Fa)** Fundamental topics of manufacturing design and processes; the effects of manufacturing processes on product design and cost; engineering design and CAD as well as product inspection; and quality control. Engineering materials, comprehensive manufacturing processes including metal machining, casting, and forming. Laboratory required. Corequisite: Lab component. Prerequisite: PHYS 2054.

**INEG3523 Manufacturing Systems (Sp)** Fundamental topics of manufacturing systems, classifications and analysis of automated manufacturing systems. Introduction to automation, hardware components of manufacturing systems, industrial control systems as well as applications on NC part programming, industrial robots, and PLC programming. Laboratory required. Corequisite: Lab component. Prerequisite: INEG 3513.

**INEG3613 Introduction to Operations Research (Sp)** Simplex method of linear programming, dual problem and sensitivity analysis; transportation and assignment problems, game theory and linear programming; introduction to dynamic programming; deterministic and probabilistic inventory models; project control with PERT/CPM. Prerequisite: INEG 3313.

**INEG3713 Methods and Standards (Sp, Fa)** Fundamental rules of motion economy; motion analysis by means of charts; diagrams; work place design; tool and equipment selection; operator selection; and job description and analysis. Fundamentals of time study; observed and synthetic times; use of standard data and time formula; leveling; rating; allowances; and computer program development of latest electronic time study equipment. Laboratory required. Corequisite: Lab component. Prerequisite: INEG 3313.

**INEG3813H Honors Product Integrity (Irregular)** This course explores the concepts of product integrity including reliability, maintainability and warranty. Particular emphasis is placed on probability modeling of product performance and statistical analysis of product reliability data. Case studies are used to reinforce concepts in an engineering setting. Prerequisite: INEG 3313 or STAT 3013, Honors College students only.

**INEG3833 Data Processing Systems Engineering (Irregular)** Design and analysis of database management systems. Information systems applications development in inventory systems, shop floor control, production scheduling, and various corporate databases. A relational database management system such as Oracle or Access is used. Prerequisite: Computer Elective II.

**INEG400VH Honors Thesis (Sp, Su, Fa) (1-3)** For Honors College students majoring in Industrial Engineering only. Prerequisite: Honors college students only.

**INEG410V Special Topics in Industrial Engineering (Irregular) (1-3)** Consideration of current industrial engineering topics not covered in other courses. Prerequisite: Senior standing. May be repeated for up to 3 hours of degree credit.

**INEG410VH Honors Special Topics in Industrial Engineering (Irregular) (1-3)** Consideration of current industrial engineering topics not covered in other courses. Prerequisite: senior standing. May be repeated for up to 3 hours of degree credit.

**INEG411V Individual Study in Industrial Engineering (Sp, Su, Fa) (1-3)** Individual study and research on a topic mutually agreeable to the student and a faculty member.

**INEG411VH Honors Individual Study in Industrial Engineering (Sp, Su, Fa) (1-3)** Individual study and research on a topic mutually agreeable to the student and a faculty member.

**INEG4223 Occupational Safety and Health Standards (Irregular)** Survey of existing and proposed standards by examining fundamental physical, economic, and legal bases. Performance vs. specific standards. Enforceability and data collection. National consensus and promulgation process. Includes a computer-based design project. Prerequisite: PHYS 2054 or graduate standing.

**INEG4223H Honors Occupational Safety and Health Standards (Irregular)** Survey of existing and proposed standards by examining fundamental physical, economic, and legal bases. Performance vs. specific standards. Enforceability and data collection. National consensus and promulgation process. Includes a computer-based design project. Prerequisite: PHYS 2054 or graduate standing.

**INEG4243 Automated Manufacturing (Irregular)** Introduction to manufacturing processes and concurrent engineering in the electronics industry. Survey of electronics components and products and the processes of fabrication and assembly. Principles of design, productivity, quality, and economics. Emphasis on manufacturability. Prerequisite: INEG 3513.

**INEG4323 Quality Engineering and Management (Irregular)** Provides the student with complete coverage of the functional area of "Quality Assurance" ranging from the need for such a function, how it works, techniques utilized, and managerial approaches for insuring its effectiveness. Prerequisite: Senior standing.

**INEG4343 Introduction to Human-Computer Interaction (Fa)** Fundamental theory and practice of the design, implementation, and evaluation of human-computer interfaces, with emphases on the importance of good interfaces and the relationship of interface design to effective user interaction with computers.

**INEG4383 Risk Analysis for Transportation and Logistics Systems (Irregular)** Fundamentals of modeling risk, analyzing risk, and managing risk in a variety of industrial and government decision-making settings. Risk measurement and model building, uncertainty quantification, and multi-objective trade-offs. Prerequisites: INEG 3313 and INEG 4553.

**INEG4423 Advanced Engineering Economy (Irregular)**

Preparation of feasibility studies, including cost estimation, risk and uncertainty, sensitivity analysis and decision making. Effects of taxes, depreciation and financing costs on cash flows. Prerequisite: INEG 3413.

**INEG4423H Honors Advanced Engineering Economy (Irregular)** Preparation of feasibility studies, including cost estimation, risk and uncertainty, sensitivity analysis and decision making. Effects of taxes, depreciation and financing costs on cash flows. Prerequisite: INEG 3413.

**INEG4433 Systems Engineering and Management (Fa)** Studies of cases in engineering administration emphasizing human relationships in a technical environment. Productivity/quality enhancement through an understanding of organizational design and behavior, motivation and reward systems, and participative management. Prerequisite: Senior standing.

**INEG4433H Honors Systems Engineering and Management (Fa)** Studies of cases in engineering administration emphasizing human relationships in a technical environment. Productivity/quality enhancement through an understanding of organizational design and behavior, motivation and reward systems, and participative management. Prerequisite: Senior standing.

**INEG4443 Project Management (Irregular)** Analysis of the strategic level of engineering management including environment, planning, organization, and staffing. Professional creativity, motivation, leadership, and ethics are explored. At the tactical level, project selection, control and systems management are analyzed. Organizational behavior and models related to scientific and professional employees are examined. Prerequisite: Senior standing.

**INEG4443H Honors Project Management (Irregular)** Analysis of the strategic level of engineering management including environment, planning, organization, and staffing. Professional creativity, motivation, leadership, and ethics are explored. At the tactical level, project selection, control and systems management are analyzed. Organizational behavior and models related to scientific and professional employees are examined. Prerequisite: senior standing.

**INEG4533 Application of Machine Vision (Sp)** Automated machine vision applied to assembly and inspection tasks traditionally performed by human operators; development of application by acquiring image, processing image data, analyzing image and transmitting results; application analysis, selection and economics. Laboratory required. Corequisite: Lab component. Prerequisite: Senior standing.

**INEG4543 Materials Handling (Fa)** Equipment, systems, problems, and analysis of industrial material handling, with emphasis upon manufacturing. Vehicles, containers and racks, conveyors, overhead systems, and miscellaneous equipment. Criteria for selection and decision models. Laboratory required. Corequisite: Lab component. Prerequisite: INEG 3413, INEG 3713 and INEG 3523.

**INEG4553 Production Planning and Control (Sp)** Operational problems of production systems including a control of purchased materials inventory; scheduling a job shop, batch, and continuous production processes for single and multi-item product lines; planning of work force and inventory under seasonal and stochastic demand. Prerequisite or Corequisite: INEG 3613.

**INEG4563 Application of Robotics (Fa)** Industrial robotics, programming and applications; tooling and interfacing with peripheral equipment; sensor technology; machine vision; application analysis; selection and justification; research; economics; and human interface. Laboratory required. Corequisite: Lab component. Prerequisite: Senior standing.

**INEG4623 Introduction to Simulation (Fa)** Elementary queuing models derivations and applications. Discrete simulation techniques. The SIMNET simulation language. Applications of simulation to the design of industrial and service installations. Simulation project. Prerequisite: CSCE 2013. Pre or Corequisite: INEG 3333.

**INEG4623H Honors Introduction to Simulation (Fa)** Elementary queuing models derivations and applications. Discrete simulation techniques. The SIMNET simulation language. Applications of simulation to the design of industrial and service installations. Simulation project. Prerequisite: CSCE 2013. Pre or Corequisite: INEG 3333.

**INEG4633 Transportation Logistics (Irregular)** Topics in transportation logistics of interest to engineers: routing and location analysis, fleet sizing, logistics facilities design, applications of Geographic Information Systems (GIS) and Global Positioning System (GPS) technologies to transportation systems modeling and analysis. Prerequisite: INEG 3613.

**INEG4723 Ergonomics (Sp, Fa)** The capabilities and limitations of humans are addressed in the context of the person's interaction with machines and the environment. Topics of discussion include anthropometric considerations in equipment design, human sensory and physiological capabilities in the work environment, selection and training of workers, and the design of controls and displays. Corequisite: Lab component. Prerequisite: INEG 3713 and INEG 4333.

**INEG4733 Industrial Ergonomics (Irregular)** Gives background and experience in measurement and evaluation of human performance as it pertains to the working environment. The physical,

physiological and psychological capabilities of the tasks they are to perform. Laboratory projects required. Prerequisite: INEG 4723 and INEG 3333.

**INEG4904 Industrial Engineering Design (Sp, Fa)** Comprehensive design problem for an industrial enterprise; integration of preceding courses through development of physical systems and organizational characteristics, financial aspects, product analysis, equipment selection, production layout, distribution systems, and overall economic analysis. Students must be in last long semester of degree program. Prerequisite: INEG 4543 and INEG 4623.

**INEG5123 Industrial Engineering in the Service Sector (Irregular)** Review of the development of industrial engineering into the service sector, e.g., health care systems, banking, municipal services, utilities, and postal service. Emphasizes those principles and methodologies applicable to the solutions of problems within the service industries. Prerequisite: Graduate standing.

**INEG513V Master's Research Project and Report (Sp, Su, Fa) (1-6)** Required course for students electing the report option.

**INEG514V Special Topics in Industrial Engineering (Irregular) (1-3)** Consideration of current industrial engineering topics not covered in other courses. Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**INEG515V Individual Study in Industrial Engineering (Sp, Su, Fa) (1-3)** Opportunity for individual study of advanced subjects related to a graduate industrial engineering program to suit individual requirements. Prerequisite: Graduate standing.

**INEG5223 Safety and Health Standards Research (Irregular)** For graduate students who seek Certified Professional or Certified Industrial Hygienist status, or both. Includes review and development of computer databases for standards, interpretations, court decisions, and field memoranda. Test equipment and procedures for determining indoor industrial air containment PEL concentrations and industrial environment noise levels are examined. Prerequisite: INEG 4223 or OMTG 4303. (Same as OMTG 5223)

**INEG5243 Automated Manufacturing (Irregular)** Introduction to manufacturing processes and concurrent engineering in the electronics industry. Survey of electronics components and products and the processes of fabrication and assembly. Principles of design, productivity, quality, and economics. Emphasis on manufacturability.

**INEG5313 Engineering Applications of Probability Theory and Stochastic Processes (Sp)** Basic probability theory; random variables and stochastic processes; distribution of sums, products, and quotients of random variables, with application to engineering; normal and Poisson processes; engineering applications of Markov chains, ergodic theorem, and applications. Prerequisite: INEG 3313 and MATH 2574.

**INEG5323 Reliability (Irregular)** Reliability and maintenance techniques including probability modeling, statistical analysis, testing and improvement. Emphasis on engineering applications and computer analysis methods. Prerequisite: INEG 3313 or equivalent.

**INEG5333 Design of Industrial Experiments (Irregular)** Statistical analysis as applied to problems and experiments in engineering and industrial research; experiment design and analysis; probability; and response surface analysis. Prerequisite: INEG 3333 or equivalent.

**INEG5343 Advanced Quality Control Methods (Irregular)** Acceptance sampling by attributes; single, double, sequential, and multiple sampling plans; sampling plans; sampling plans of Department of Defense; acceptance sampling by variables; Bayesian acceptance sampling; rectifying inspection for lot-by-lot sampling; control charts; special devices; and procedures. Prerequisite: INEG 3313.

**INEG5363 Generalized Linear Models (Irregular)** Introduce the generalized linear model (GLM), inference, likelihood and diagnostics. Apply log linear and logistic models. Develop techniques for growth curves, and longitudinal and survival data. Cover spatial and normal linear models, and dynamic GLM for dependent data.

**INEG5373 Repairable Systems Modeling (Irregular)** Applications of probability, statistics, simulation and optimization to problems related to 1) modeling the performance of repairable equipment; 2) designing optimal inspection and maintenance policies for repairable equipment; and 3) optimizing the allocation of maintenance resources.

**INEG5383 Risk Analysis for Transportation and Logistics Systems (Irregular)** Fundamentals of modeling risk, analyzing risk, and managing risk in a variety of industrial and government decision-making settings. Risk measurement and model building, uncertainty quantification, and multi-objective trade-offs. Credit cannot be earned for both INEG 4383 and INEG 5383.

**INEG5393 Applied Regression Analysis for Engineers (Irregular)** Present concepts and applications to introduce statistical tools for discovering relationships among variables. Focus on fitting and checking linear and nonlinear regression models. Practical tools for engineers.

**INEG5423 Engineering in Global Competition (Irregular)** Studies of principles and cases in engineering administration in global competition. Emphasis on high-technology manufacturing

such as the electronics industry. Survey of markets, technologies, multinational corporations, cultures, and customs. Discussions of ethics, professionalism, difference valuing, human relations skills, and other topics relevant to global engineering practice.

**INEG5433 Cost Estimation Models (Irregular)** Overview of cost estimation techniques and methodologies applied to manufacturing and service organizations. Accomplished through detailed analysis of the cost estimation development process and various cost estimation models. Topics include data collection and management, learning curves, activity based costing, detailed and parametric estimation models, and handling risk and uncertainty. Prerequisite: INEG 3333. (Same as OMG 5433)

**INEG5443 Decision Models (Irregular)** Focus on quantitative and qualitative decision models and techniques for technical and managerial problems. Emphasis on application and interpretation of results. Topics include decision trees, influence diagrams, weighting methods, value of information, Analytic Hierarchy Process, Bayes Theorem, Monte Carlo simulation, utility theory, risk analysis, group decision making and expert systems. Prerequisite: INEG 3313.

**INEG5523 Topics in Automated Systems (Irregular)** To understand current developments in applications of flexible automation to industrial processes. Robotics, machine vision and other sensors, human machine interface, AML/2 and V+ programming languages.

**INEG5533 Transportation Logistics (Irregular)** Topics in transportation logistics of interest to engineers: routing and location analysis, fleet sizing, logistics facilities design, applications of Geographic Information Systems (GIS) and Global Positioning System (GPS) technologies to transportation systems modeling and analysis. Prerequisite: INEG 5613.

**INEG5543 Distribution Center Design & Operations (Irregular)** To introduce the student to the field of facility logistics, as applied to distribution centers (DCs). The fundamental areas of facility design and operations (material handling systems) will be covered. Prerequisite: INEG 5613

**INEG5613 Optimization Theory I (Fa)** Basic solutions and bases in linear equations, matrix version of simplex tableau, duality and primal dual relationships, complementary slackness, revised simplex, interior point algorithms and improving search strategies. Prerequisite: Graduate standing.

**INEG5623 Analysis of Inventory Systems (Irregular)** Elements of production and inventory control, economic lot size models, price breaks models using Lagrangian method, deterministic dynamic inventory model, probabilistic one-period and multi-period models, zero and positive lead time models, and continuous review models. Prerequisite: INEG 5313.

**INEG5643 Optimization Theory II (Irregular)** Classical optimization theory, Lagrangian and Jacobian methods, Kuhn-Tucker theory and constraint qualification, duality in nonlinear problems; separable programming, quadratic programming, geometric programming, stochastic programming, steepest ascent method, convex combinations method, SUMT, Fibonacci search, and golden section method. Prerequisite: INEG 5613.

**INEG5653 Modeling and Analysis of Semiconductor Manufacturing (Irregular)** Introduction to front end of semiconductor manufacturing process, wafer processing. Topics include an introduction to wafer processing, factory and equipment capacity modeling, automated material handling, simulation, cost modeling, and production scheduling. Prerequisite: INEG 3313.

**INEG5683 Nonlinear Programming (Irregular)** An introduction to the theory and methodology of nonlinear programming. Focus on engineering and management science applications of nonlinear optimization. Both single and multi-variable as well as unconstrained and constrained problems are addressed.

**INEG5693 Heuristic Optimization (Irregular)** Theory and applications of methodological approaches explicitly addressed to heuristic or approximate optimization of integer and combinatorial models. Prerequisite: INEG 5613.

**INEG5713 Advanced Topics in Human Factors Engineering (Irregular)** Advanced work in special research topics in man-machine systems. Prerequisite: INEG 4723.

**INEG5823 Systems Simulation I (Irregular)** Monte Carlo technique, construction of digital simulation models, timekeeping in simulations, design of simulation experiment, and statistical verification of results. Includes the use of simulation language such as ARENA. Prerequisite: CSCE 2013 and INEG 3313 (or equivalent).

**INEG5843 Scheduling and Sequencing I (Irregular)** An introduction to constructive algorithms and various operations research approaches for solving sequencing and scheduling problems. The NP-completeness of most scheduling problems leads to a discussion of computational complexity, the use of heuristic solution methods, and the development of worst case bounds. Prerequisite: INEG 3613 and computer programming proficiency.

**INEG600V Master's Thesis (Sp, Su, Fa) (1-9)**

**INEG6613 Operations Research Applications (Irregular)** Investigation of literature case studies; use of mathematical models to solve practical problems; data collection and solution implementa-

tion. Students work in teams on actual problems observed in industry and government. Prerequisite: INEG 4623, INEG 5313 and INEG 5613.

**INEG6823 Systems Simulation II (Irregular)** Advanced topics in computer simulation including experimental design, simulation optimization, variance reduction, and statistical output analysis techniques applied to discrete event simulation. Prerequisite: INEG 4623.

**INEG6843 Scheduling and Sequencing II (Irregular)** An investigation into constructive algorithms and various operations research approaches for solving sequencing and scheduling problems in a variety of machine environments (single-machine, parallel machines, flow shops, and job shops). Prerequisite: INEG 5843.

**INEG700V Doctoral Dissertation (Sp, Su, Fa) (1-18)**

## Information Systems (ISYS)

**ISYS2263 Introduction to Information Systems (Sp, Fa)**

This course presents the fundamental concepts used in developing information systems. It provides a framework for students to use throughout their software development coursework. Also includes management of information systems concepts. This course requires extensive use of computer systems. Prerequisite: WCOB 1023 and MATH 2053 each with a grade of C or better.

**ISYS3293 Systems Analysis and Design (Sp, Fa)** Practice and application of one structured analysis methodology; development of structured analysis specification; exposure to other methodologies; quality assurance and walkthroughs; survey of real systems and their components. Prerequisite: ISYS 2263 or CSCE 2014 with a grade of "C" or better.

**ISYS3393 Business Application Development Fundamentals (Sp)** Principles of design and development of windows and web applications using cutting edge visual development tools included in Visual Studio. The programming language will be Visual Basic and its use in Windows applications and in conjunction with active server pages and XML for web applications. Prerequisite: ISYS 2263 or CSCE 2014 with a grade of "C" or better.

**ISYS4003H Honors Information Systems Colloquium (Fa)** Explores events, concepts and/or new developments in the field of Computer Information Systems and Quantitative Analysis. Prerequisite: Senior standing.

**ISYS4133 E Business Development (Irregular)** This course explores various e-business development technologies and then utilizes the technologies for developing a relatively realistic business-to-consumer (B2C) e-business site. Students will also learn about Business to Business (B2B) strategies, market exchanges, XML and XML Web services applications. Simple XML Web services will also be created. Prerequisite: ISYS 3393 or ISYS 4373 or CSCE 1123 with a grade of "C" or better.

**ISYS4233 Seminar in ERP Development (Sp)** ERP administration and system development practices. Advanced system support issues related to Enterprise Resource Planning systems that are used in global organizations. Basic ABAP programming. In addition, students will learn how to provide basic systems administration support of the operating system, database, and application systems software levels or ERP systems. Pre- or Corequisite: WCOB 4223 with a grade of "C" or better.

**ISYS4243 Current Topics in Computer Information (Irregular)** Intensive investigation of selected developments in computer information systems hardware, software, and organization having current impact on computer information systems design and application. Offering an extension of lower-level CIS courses through individual student research and faculty team-teaching of advanced topics. Topical selection made with each course offering. Prerequisite: Junior standing. May be repeated for up to 6 hours of degree credit.

**ISYS4263 Information Technology Strategy (Irregular)** This course explores the strategic management and control issues associated with IT. This course provides a framework to understand how IT strategy aligns with business strategy and how to develop an enterprise level information technology strategy. Prerequisite: WCOB 3016 with a grade of "C" or better.

**ISYS4283 Business Database Systems (Fa)** Introduces student to centralized information system design and implementation for business applications. In-depth study of logical systems modeling; physical file management; and software requirements. Pre- or Corequisite: ISYS 3393 with a grade of "C" or better. Prerequisite: ISYS 3293 with a grade of "C" or better.

**ISYS4293 Business Intelligence (Sp)** Business intelligence focuses on creating, developing and storing information and knowledge from internal and external sources to better support business decisions. We will consider techniques from machine learning, data mining, and information retrieval to extract useful knowledge from data, which could be used for business intelligence, personalization or user profiling. Prerequisite: WCOB 1033 with a grade of "C" or better.

**ISYS4333 Object-Oriented Technologies Seminar (Irregu-**

**lar)** Provides the student with theory and application of information systems development utilizing object-oriented (OO) technology. Topics include object-oriented analysis, design, data modeling, database management systems, and programming. Prerequisite: ISYS 3293 with a grade of "C" or better.

**ISYS4363 Business Project Development (Sp)** Review of fundamentals of application processing systems design and development; implementation of such a system by class. Pre- or Corequisite: ISYS 4283 with a grade of "C" or better. Prerequisite: ISYS 3393 with a grade of "C" or better.

**ISYS4373 Application Development with Java (Fa)** This course covers object-oriented programming concepts and illustrates them via an appropriate object-oriented programming language. Students will be exposed to the design of software objects, creation of software objects, and the use of objects in constructing an information system. Prerequisite: ISYS 3293.

**ISYS4453 Introduction to Enterprise Servers (Fa)** The focus of this course is to expose students to working with large scale mainframe computer systems. Mainframe computers are the heart of large company's transaction processing systems. This course provides the opportunity for students to gain valuable insight into computing in a mainframe operating environment. Prerequisite: ISYS 2263 or CSCE 2014 with a grade of "C" or better.

**ISYS4463 Enterprise Transaction Systems (Sp)** Being able to accurately capture and store business transactions is an important processing function in many businesses. For many large companies with high volume processing, the tools of choice for transaction processing are CICS/Cobol/DB2. This course provides students with the necessary understanding and skills to work in this type environment. Prerequisite: ISYS 2263 or CSCE 2014 or ISYS 4453 with a grade of "C" or better.

**ISYS450V Independent Study (Sp, Fa) (1-3)** Permits students on individual basis to explore selected topics in data processing and/or Quantitative Analysis.

**ISYS4933 Global Information Technology Management (Irregular)** This course will focus on IT environments around the world, national infrastructures and regulatory regimes, global IT applications, global IS development strategies, global management support systems, and global IT management strategies. The course will inculcate an in-depth understanding of managing information resources across national borders, time zones, cultures, political philosophies, regulatory regimes, and economic infrastructures. Prerequisite: WCOB 3016 with a grade of "C" or better.

**ISYS511V IT Toolkit & Skills Seminar (Irregular) (0-3)** Seminar in Information Systems solutions concepts (such as applications development, VB.NET, analysis of problems and design of solutions via application systems, etc.) designed for students entering the MIS program. Prerequisite: MIS Director approval. May be repeated for up to 3 hours of degree credit.

**ISYS5133 E Business Development (Sp)** This course explores various e-business development technologies and then utilizes the technologies for developing a relatively realistic business-to-consumer (B2C) e-business site. Students will also learn about Business to Business (B2B) strategies, market exchanges, XML and XML Web services applications. Simple XML Web services will also be created. Prerequisite: ISYS 5110 (or equivalent).

**ISYS5203 Statistics and Quantitative Analysis (Fa)** (First offered Summer 2002, Formerly CISQ 5203) Statistical analysis at intermediate level; lectures and problems develop understanding of statistical methods and provide illustrative situations for applying those methods. Includes analysis of variance and multiple regression. Prerequisite: ISYS 3033.

**ISYS5233 Seminar in ERP Development (Sp, Fa)** ERP administration and system development practices. Advanced system support issues related to Enterprise Resource Planning systems that are used in global organizations. Basic ABAP programming. In addition, students will learn how to provide basic systems administration support of the operating system, database, and application systems software levels of ERP systems. Pre- or Corequisite: WCOB 5223. Prerequisite: ISYS 5110 (or equivalent) and WCOB 5213. May be repeated for up to 6 hours of degree credit.

**ISYS535V Information Technology Internship Experience (Sp, Su, Fa) (1-3)** This course allows a student to experience an internship within a business and benefit from the applied IT experience. The internship must focus on IT applications/problems and be supervised by a faculty member as well as a member of the firm. Pre- or corequisite: MIS Director approval is required. May be repeated for up to 3 hours of degree credit.

**ISYS5363 Business Analytics (Sp)** This course in managerial business analytics provides future managers with the key concepts of decision modeling and information technology management concepts. Students will learn to utilize real time operational business data, as well as quickly process and effectively leverage information. In addition, students will exercise strategic IT deployment skills for supply chain and marketing processes as well as develop strong decision modeling abilities.

**ISYS5423 Seminar in Systems Development (Fa)** Advanced study of structured systems development. Emphasis on strategies and techniques of structured analysis and structured design for producing logical systems specifications and for deriving physical systems designs. Coverage of methodologies for dealing with complexity in the development of information systems. Prerequisite: ISYS 5110 (or equivalent) and ISYS 5293 (or equivalent).

**ISYS5433 Enterprise Systems (Fa)** Enterprise Systems comprises the entire class of information technology and systems that support the mission of the company including decision support and business processes. This managerial enterprise systems course focuses on strategic issues of information technology. Students study the various elements and integration of an organization's business processes; as a result, students gain an understanding and working knowledge of systems used to support these business processes and their use in decision making. In addition, students will study concepts and develop skills needed to utilize decision-centric business intelligence and knowledge management applications.

**ISYS5453 Introduction to Enterprise Servers (Fa)** The focus of this course is to expose students to working with large scale mainframe computer systems. Mainframe computers are the heart of large company's transaction processing systems. This course provides the opportunity for students to gain valuable insight into computing in a mainframe operating environment. Prerequisite: ISYS 5110 or equivalent.

**ISYS5463 Enterprise Transaction Systems (Sp)** Being able to accurately capture and store business transactions is an important processing function in many businesses. For many large companies with high volume processing, the tools of choice for transaction processing are CICS/Cobol/DB2. This course provides students with the necessary understanding and skills to work in this type environment. Pre- or Corequisite: ISYS 5453 (or equivalent) or MIS Director approval. Prerequisite: ISYS 5110 (or equivalent).

**ISYS5503 Decision Support Systems (Sp)** An analysis of the highest level of information support which serves the manager-user. A study of systems providing quantitative-based information derived from one or more databases within and/or external to the organization and used to aid upper-level management in the decision making process. The evaluation and application of tools in problem solving and decision making. Prerequisite: ISYS 5110 (or equivalent).

**ISYS5613 Business Applications of Nonparametric Techniques (Sp)** (First offered Summer 2002, Formerly CISQ 5613) Consideration of business and economic research related to sampling and experimental design, testing of hypothesis, and using nonparametric tests. Prerequisite: ISYS 5203 or equivalent.

**ISYS5623 Statistical Analysis (Sp)** Applications of statistical techniques and analysis of business and economic research. For students in business and economics without regard to fields of specialization. Prerequisite: ISYS 5203.

**ISYS5713 Seminar in Telecommunications (Irregular)** General telecommunications characteristics and capabilities relative to business applications, networking, electronic commerce, consideration of IT management, security, and ethics. Prerequisite: ISYS 5110.

**ISYS5723 Computer Methods in Research (Su)** Applications of computers to business and industrial research. Numerical problem-solving techniques, statistical computational techniques and packages, and accessing of government and private standard data bases. Prerequisite: ISYS 5623.

**ISYS5833 Data Management Systems (Fa)** Investigation and application of advanced database concepts include database administration, database technology, and selection and acquisition of database management systems. Data modeling and system development in a database environment. Pre- or Corequisite: ISYS 5423. Prerequisite: ISYS 5110 (or equivalent).

**ISYS5843 Seminar in Business Intelligence and Knowledge Management (Fa)** Business intelligence focuses on assessing and creating information and knowledge from internal and external sources to support business decision making process. In this seminar, data mining and information retrieval techniques will be used to extract useful knowledge from data, which could be used for business intelligence, and knowledge management. Prerequisite: ISYS 5503 or equivalent and ISYS 5833 or equivalent.

**ISYS5933 Global Information Systems Seminar (Su)** This course is designed to provide an updated, comprehensive and rigorous treatment of the emerging global IT fields. It summarizes current experiences, offers managerial insights, and incorporates foundational perspectives and examines significant issues from global perspectives. Prerequisite: Graduate standing and MIS Director approval.

**ISYS5943 Management of Information Technology Seminar (Sp)** Presented in a way that allows you to play an active role in the design, use, and management of information technology. Using IT to transform the organization, as competitive strategy, and creating new relationship with other firms is included. Prerequisite: ISYS 5423 and ISYS 5833.

**ISYS6011 Graduate Colloquium (Sp, Fa)** Presentation and critique of research papers and proposals.

**ISYS6333 Research Seminar (Sp, Fa)** Topical research seminar; emphases on understanding and conducting information systems research. Topics will vary. May be repeated for up to 18 hours of degree credit.

**ISYS636V Special Problems (Irregular) (1-6)** Independent reading and research under supervision of senior staff member. May be repeated for up to 6 hours of degree credit.

**ISYS6423 Seminar in Causal Modeling (Sp)** Exposure to use of causal modeling in current research. Particular emphasis given to confirmatory analysis, covariance structure modeling, and their applications in construct measurement and hypothesis testing.

**ISYS700V Doctoral Dissertations (Sp, Su, Fa) (1-18)**  
Prerequisite: Candidacy.

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### Italian (ITAL)

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**ITAL1003 Elementary Italian I (Fa)**

**ITAL1013 Elementary Italian II (Sp)** Elementary courses stress correct pronunciation, aural comprehension, and simple speaking ability, and lead to active mastery of basic grammar and limited reading ability.

**ITAL2003 Intermediate Italian I (Fa)** Intermediate courses lead to greater facility in spoken language and to more advanced reading skills.

**ITAL2013 Intermediate Italian II (Sp)** Continued development of basic speaking comprehension, and writing skills and intensive development of reading skills.

**ITAL3003 Italian Conversation (Fa)** Three hours per week of guided conversation practice for the post-intermediate student. Prerequisite: ITAL 2013.

**ITAL3013 Introduction to Literature (Sp)** Development of reading skills and introduction to literary analysis. Prerequisite: ITAL 2013 or equivalent. May be repeated for up to 3 hours of degree credit.

**ITAL4003 Advanced Italian Conversation (Fa)** Conversation practice for advanced undergraduates. Intended to refine language comprehension while providing in-depth understanding of Italian life and culture. Prerequisite: ITAL 3003 and ITAL 3013.

**ITAL475V Special Investigations (Irregular) (1-6)** May be repeated for up to 6 hours of degree credit.

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### Japanese (JAPN)

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**JAPN1003 Elementary Japanese I (Fa)**

**JAPN1013 Elementary Japanese II (Sp)** Elementary courses stress correct pronunciation, aural comprehension, and simple speaking ability, and lead to active mastery of basic grammar and limited reading ability.

**JAPN2003 Intermediate Japanese I (Fa)** Intermediate courses lead to greater facility in spoken language and to more advanced reading skills.

**JAPN2013 Intermediate Japanese II (Sp)** Continued development of basic reading comprehension and writing skills and intensive development of reading skills. Prerequisite: JAPN 2003 or equivalent.

**JAPN2013H Honors Intermediate Japanese II (Sp)** Continued development of basic reading comprehension and writing skills and intensive development of reading skills. Prerequisite: JAPN 2003 or equivalent.

**JAPN2022 Intermediate Conversation I (Sp, Fa)** Supplemental to 2003. Provides 2 hours of guided conversation per week with the objective of building the listening/speaking skills.

**JAPN3003 Advanced Japanese I (Fa)** Introduces more complex forms and structures of the language as well as more Kanji (Chinese Characters) aiming at the improvement of all the skills: speaking, listening, writing and reading. Prerequisite: JAPN 2013.

**JAPN3003H Honors Advanced Japanese I (Fa)** Introduces more complex forms and structures of the language as well as more Kanji (Chinese Characters) aiming at the improvement of all the skills: speaking, listening, writing and reading. Prerequisite: JAPN 2013.

**JAPN3013 Advanced Japanese II (Sp)** Continuation of JAPN 3003 with more complex forms and structures of the language as well as more Kanji (Chinese Characters) aiming at the improvement of all the skills: speaking, listening, writing and reading. Prerequisite: JAPN 3003.

**JAPN3013H Honors Advanced Japanese II (Sp)** Continuation of JAPN 3003 with more complex forms and structures of the language as well as more Kanji (Chinese Characters) aiming at the improvement of all the skills: speaking, listening, writing and reading. Prerequisite: JAPN 3003.

**JAPN3033 Advanced Japanese Conversation (Fa)** Conversational practice for advanced learners of Japanese. Designed primarily for students who intend to use Japanese in business and other formal settings. Honorific and humble expressions will be emphasized. Prerequisite: JAPN 2013.

**JAPN3033H Honors Advanced Japanese Conversation**

(Fa) Conversational practice for advanced learners of Japanese. Designed primarily for students who intend to use Japanese in business and other formal settings. Honorific and humble expressions will be emphasized. Prerequisite: JAPN 2013.

**JAPN3983 Special Studies (Irregular)** May be offered in a subject not specifically covered by courses otherwise listed. May be repeated for up to 6 hours of degree credit.

**JAPN3983H Honors Special Studies (Irregular)** May be offered in a subject not specifically covered by courses otherwise listed. May be repeated for up to 6 hours of degree credit.

**JAPN4213 Japanese Culture (Irregular)** Insight into Japanese civilization and culture with special emphasis on the areas such as social life and environment, education, religion and customs, and visual and performing arts. This course also discusses western influence on Japanese society, culture and language and how traditional and modern values are manifested in Japanese society. Prerequisite: JAPN 2013. May be repeated for up to 6 hours of degree credit.

**JAPN4313 Language and Society of Japan (Fa)** The primary objective of this course is to investigate the way the Japanese language reflects the beliefs and custom of the Japanese people as a social group. For comparison purposes, this course makes reference to studies in American language and culture. Proficiency in Japanese not required. Prerequisite: Junior standing.

**JAPN4313H Honors Language and Society of Japan (Fa)** The primary objective of this course is to investigate the way the Japanese language reflects the beliefs and custom of the Japanese people as a social group. For comparison purposes, this course makes reference to studies in American language and culture. Proficiency in Japanese not required. Prerequisite: Junior standing.

**JAPN4333 Business Writing in Japanese (Sp)** This course aims to familiarize the students with formats, vocabulary, and situationally specific expressions in Japanese business correspondence. Prerequisite: JAPN 2013 or equivalent Japanese proficiency.

**JAPN4333H Honors Business Writing in Japanese (Sp)** This course aims to familiarize the students with formats, vocabulary, and situationally specific expressions in Japanese business correspondence. Prerequisite: JAPN 2013 or equivalent Japanese proficiency.

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### Journalism (JOUR)

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**JOUR1023 Media and Society (Sp, Fa)** A survey of mass media (newspaper, radio, TV, magazine, advertising, public relations, photography, etc.) which stresses their importance in today's society and introduces the student to the various areas in journalism. Recommended for students considering journalism as a major. Prerequisite: Journalism major or department consent.

**JOUR1033 Fundamentals of Journalism (Sp, Su, Fa)** Introduces students to the skills of observation, critical thinking and concise writing required in all aspects of journalism, as well as to the technology needed in upper-level courses. Practice using references for grammar and journalistic style. A prerequisite to JOUR 2013, 2033, 2063 and 4143. Corequisite: Lab component. Prerequisite: Journalism major or department consent.

**JOUR1033H Honors Fundamentals of Journalism (Sp, Fa)** Introduces students to the skills of observation, critical thinking and concise writing required in all aspects of journalism, as well as to the technology needed in upper-level courses. Practice using references for grammar and journalistic style. A prerequisite to JOUR 2013, 2033, 2063 and 4143. Corequisite: Lab component.

**JOUR2013 News Reporting I (Sp, Fa)** Intensive training in the methods of gathering and writing news. Lecture 2 hours, laboratory 2 hours per week. Prerequisite: JOUR 1023 and JOUR 1033, each with a grade of C or better.

**JOUR2013H Honors News Reporting I (Sp, Fa)** Intensive training in the methods of gathering and writing news. Lecture 2 hours, laboratory 2 hours per week. Prerequisite: JOUR 1023 and JOUR 1033.

**JOUR2031L Broadcast News Reporting I Laboratory (Sp, Fa)** Provides experience in basic broadcast news reporting techniques. Laboratory 3 hours per week. Corequisite: JOUR 2032. Prerequisite: JOUR 1033 with a grade of C or better.

**JOUR2032 Broadcast News Reporting I (Sp, Fa)** Intensive training in the methods of gathering and writing broadcast news. Lecture 2 hours per week. Corequisite: JOUR 2031L. Prerequisite: JOUR 1033 with a grade of C or better.

**JOUR2063 Media Technology (Su, Fa)** Introduction to computer skills required in journalism; focus is training in the major computer software used in the profession. Prerequisite: JOUR 1023 and JOUR 1033.

**JOUR2331L Photojournalism I Laboratory (Fa)** Photojournalism 1 Lab involves the transfer of images from a digital camera to a computer, and involves the use of image editing and enhancing software as well as layout and design software. Corequisite: JOUR 2332.

**JOUR2332 Photo Journalism I (Fa)** Beginning course in the

fundamentals of photography, including digital photography, composition, file transfer and management, image enhancement, and layout and design. Corequisite: JOUR 2331L.

**JOUR3013 Editing (Sp, Fa)** Theories and practices in newspaper editing, copyreading, headline writing, page layout and the gathering and publication of written and pictorial information. Prerequisite: JOUR 1023 and JOUR 2013.

**JOUR3023 News Reporting II (Sp, Su, Fa)** Continuation of JOUR 2013. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: JOUR 2013.

**JOUR3071L Broadcast News Reporting II Laboratory (Sp, Fa)** Television studio production including producing, directing, teleprompter, character generation, audio, lighting, and camera operation. Produce weekly TV news program for broadcast. Corequisite: JOUR 3072. Prerequisite: JOUR 2032 and JOUR 2031L.

**JOUR3072 Broadcast News Reporting II (Sp, Fa)** Advanced techniques in broadcast journalism including: covering beats; writing and interviewing; and producing news program for television. Corequisite: JOUR 3071L. Prerequisite: JOUR 2032 and JOUR 2031L.

**JOUR3083 Photojournalism II (Sp, Su, Fa)** Study of news and feature photography. Includes planning and shooting photographs for newspapers and magazines, photojournalistic techniques, and other aspects of photographing for publication. Lecture 3 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: JOUR 2332 and JOUR 2331L.

**JOUR3093 Web Design for Journalism, Advertising & Public Relations (Sp)** Course covers basic UNIX and HTML, and leading web design software. Major focus is on journalistic informational and commercial sites; minor focus on personal pages. Prerequisite: JOUR 2063.

**JOUR3123 Feature Writing (Sp, Su, Fa)** Study of non-fiction newspaper and magazine feature articles with emphasis on locating subjects, and on writing techniques and practice in article writing. Prerequisite: JOUR 2013.

**JOUR3133 Editorial Writing (Irregular)** Study of the opinion function of the news media. Includes editorial writing, the newspaper editorial/opinion columns, letters from readers, and broadcast commentary. Prerequisite: JOUR 2013 (or JOUR 2032) and junior standing.

**JOUR3163 Sports Journalism (Fa)** Emphasis on techniques and principles of coverage of sports and sports-related subjects on and off the field, and on the relationship between sports and the mass media.

**JOUR3633 Media Law (Sp, Fa)** Constitutional guarantees, statutory laws and court cases applicable to mass communications. Prerequisite: Junior standing.

**JOUR3723 Advertising Principles (Sp, Fa)** Introductory course to the broad field of advertising. The course includes a study of the role of advertising in modern society with emphasis being given to the extent and manner of use of advertising in newspapers, magazines, radio, television, and other media. Prerequisite: Junior standing and 2.25 overall grade point average.

**JOUR3743 Public Relations Principles (Sp, Fa)** Study of theory, methods, and ethics of public relations in modern society, business, and communications. Influencing opinion through acceptable performance and 2-way communication. Recommended for students in many fields. Prerequisite: Junior standing and 2.25 overall grade point average.

**JOUR3923H Honors Colloquium (Sp, Fa)** Covers a special topic or issue, offered as a part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in journalism).

**JOUR401V Advanced Journalistic Practices (Sp, Fa) (1-4)** Study of advanced journalistic practices and methods, individual or group projects. Prerequisite: Junior standing and 10 hours of journalism and a 2.5 cumulative grade average.

**JOUR402V Internship in Journalism (Sp, Su, Fa) (1-3)** Credit for practical experience gained through a journalistic internship. Report required on significant aspect of internship experience. Prerequisite: JOUR major and junior standing and 10 hours JOUR and 2.50 cumulative grade point average. May be repeated for up to 3 hours of degree credit.

**JOUR4043 Government and the Media (Fa)** Focuses on the links between mass media and government and the increasingly significant role of media in politics and government. Examines the power, responsibility, and performance of the press and public officials/government agencies in their relationship with each other. Prerequisite: Junior standing.

**JOUR405V Specialized Journalism Seminar (Irregular) (1-3)** Primary purpose of course is to enlarge the journalistic skills of students interested in advanced forms of mass communication. Students undertake projects related to particular aspects or problems of journalism. Content varies. May be repeated twice for up to 6 hours of degree credit.

**JOUR4063 Computer-Assisted Publishing (Irregular)** In-depth, hands-on exploration of computer hardware and software in the design and production of media messages. Examination of

developing media technologies and the computer's influence on design and conceptualization.

**JOUR4143 Public Relations Writing (Sp, Fa)** Instructional and writing practice to develop the professional-level writing skills required of public relations practitioners. Emphasizes different approaches required for different audiences and media. Prerequisite: JOUR 1033 with a grade of C or better and JOUR 3723 and JOUR 3743, each with a grade of B or better.

**JOUR4233 School Publications (Irregular)** Primarily for students intending to teach journalism or to supervise publications in high schools. Prerequisite: Advanced standing.

**JOUR4333 Ethics in Journalism (Irregular)** Critical examination of specific ethical problems confronting professionals in all areas of mass communications. Reading and writing assignments are aimed at familiarizing students with the nature of the mass media and their social responsibilities. Prerequisite: Junior standing.

**JOUR4413 Broadcast Advertising and Sales (Fa)** The creation of advertising campaigns for the broadcast media and techniques involved in the presentation of these campaigns to prospective media buyers. Emphasis is also placed on the gathering and use of rating systems for broadcasting. Prerequisite: JOUR 3723.

**JOUR4423 Creative Strategy and Execution (Sp, Fa)** The creation of advertising copy and layout for the mass media with emphasis on strategy, the written message, and the physical appearance for the advertisement. Includes laboratory component. Prerequisite: A grade of B or better in both JOUR 3723 and JOUR 3743.

**JOUR4453 Media Planning & Strategy (Sp, Fa)** Includes the study of media characteristics, market research, media strategies, media analysis, media-market measurements and the development of media plans. Emphasis is placed on the analysis of major mass media strategies, tactics, and planning. Prerequisite: A grade of B or better in both JOUR 3723 and JOUR 3743.

**JOUR4463 Campaigns (Sp, Su, Fa)** Applying advertising principles and techniques to preparation of a complete campaign; determining agency responsibilities, marketing objectives and research, media mix, and creative strategy. Emphasis also given to campaign presentation delivery, utilizing audio and visual techniques. Prerequisite: JOUR 3723 and JOUR 3743 and JOUR 4423 and JOUR 4453.

**JOUR4503 Advanced Feature Writing (Fa)** This course is designed for students with proven feature writing skills and basic training, to write a magazine-length, non-fiction, publishable-quality story on a timely subject that has connections to northwest Arkansas. Stories will be published in a student-managed forum. Prerequisite: JOUR 3123.

**JOUR4553 Magazine Editing and Production I (Sp, Su, Fa)** Instruction with lab work in editing and producing various types of magazines. Course includes magazine design, selecting and editing stories and photographs, laying out the story and photo pages, and other mechanical processes. Lecture 2 hours, laboratory 2 hours per week.

**JOUR4863 Television News Reporting I (Sp, Fa)** Includes the specialized knowledge and skills needed in field reporting, anchoring, writing, and producing news for commercial television. Also incorporates videography, tape editing. Lab component arranged. Corequisite: Lab component. Prerequisite: JOUR 3072 and JOUR 3071L.

**JOUR4873 Television News Reporting II (Sp, Fa)** Continuation of JOUR 4863. Laboratory component arranged. Prerequisite: JOUR 4863.

**JOUR4883 Advanced Television News Production (Irregular)** Continuation of JOUR 4873. Students prepare and present television newscasts for air. Laboratory component arranged. Corequisite: Lab component. Prerequisite: JOUR 4873.

**JOUR4903 Community Journalism (Sp)** This three-hour course will blend student reporting and editing skills with instruction on how regional newspapers select and present news to a local audience. This course will instruct students in deciding news stories for regional readers, how those stories can best be written and displayed. The semester goal is to publish a paper. Prerequisite: Junior standing.

**JOUR498V Journalism Writing Requirement (Sp, Su, Fa) (1-6)** May be repeated for up to 6 hours of degree credit.

**JOUR498VH Honors Journalism Writing Requirement (Sp, Su, Fa) (1-6)** May be repeated for up to 6 hours of degree credit.

**JOUR5003 Advanced Reporting (Irregular)** Stresses public affairs coverage, interpretive, investigative, and analytic journalism, involving research, work with documents, public records, and budgets and specialized reporting.

**JOUR5033 Critical and Opinion Writing and Commentary (Irregular)** Experience in writing and analyzing columns, editorials, criticism, and other forms of opinion and commentary in the media and in examining the media's role as a forum for opinion and commentary and its impact and influence.

**JOUR5043 Research Methods in Journalism (Sp, Su, Fa)** Research methods of utility in journalism. Emphasis on survey research, electronic data base searching, and traditional library re-

search. Prerequisite: Graduate standing or honors program standing. **JOUR5043H Honors Research Methods in Journalism (Sp, Su, Fa)** Research methods of utility in journalism. Emphasis on survey research, electronic data base searching, and traditional

library research. Prerequisite: graduate standing or honors program standing.

**JOUR5063 Issues in Advertising and Public Relations (Fa)** Seminar course involving the critical examination of the major cultural, social, political, economic, ethical, and persuasion theories and/or issues relevant to advertising and public relations affecting individuals, organizations, societies. Prerequisite: Graduate standing.

**JOUR5073 Propaganda and Public Opinion (Irregular)** Examines and analyzes the means of influencing and measuring public opinion, with an emphasis on survey research and polling.

**JOUR5183 International Mass Communications (Sp, Su, Fa)** Examination of national media systems, issues in international communications, the role of the media in coverage of international affairs, and the impact of new technologies on mass communications.

**JOUR5193 Professional Journalism Seminar (Irregular)** Examination of complex problems encountered by professional journalists with focus on research and analysis of the role of journalism in major social, economic, and political developments. May be repeated for up to 6 hours of degree credit.

**JOUR5233 Media and Public Policy (Irregular)** Focuses on the interaction between media, politics, government, and public policy, particularly on the impact and influence of the media on the public policy agenda.

**JOUR5313 Literature of Journalism (Irregular)** A study of superior works of non-fiction journalism, past and present. Includes authors from Daniel Defoe to John McPhee.

**JOUR5323 Documentary Production I (Fa)** In-depth study of documentary film as non-fiction, long form journalism. Covers subject, funding, research and development, pre-production planning, field production, talent, music, post production, promotion, broadcast and distribution. Required trip to Hot Springs Documentary Film Festival.

**JOUR5333 Documentary Production II (Sp)** A continuation of JOUR 5323, Documentary Production I. Students photograph, write, and edit a documentary begun in the fall semester. Prerequisite: JOUR 5323.

**JOUR600V Master's Thesis (Sp, Su, Fa) (1-6)** Required of all M.A. journalism students.

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## Kinesiology (KINS)

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**KINS2223 Motor Development (Sp, Su, Fa)** An overview of contemporary motor development and movement theory, developmental hierarchies, and physiological aspects of development throughout the lifespan.

**KINS2393 Prevention and Care of Athletic Injuries (Irregular)** Introduction to the prevention and care of athletic related injuries. Includes athletic injury recognition and management. Prerequisite: BIOL 2443 and BIOL 2441L.

**KINS2733 Seminar in Exercise Science (Sp)** This class will cover special topics for the Exercise Science students in preparation for entry into the profession. In addition to specific topics, students will prepare their resumes and make a formal presentation.

**KINS3153 Exercise Physiology (Su, Fa)** Examination of effects of exercise on the physiology of the systems of the body. The exploration includes effects during, immediately after, and as long term results of work and exercise. Prerequisite: BIOL 2213 and BIOL 2211L.

**KINS3153H Honors Exercise Physiology (Sp, Su, Fa)** Examination of effects of exercise on the physiology of the systems of the body. The exploration includes effects during, immediately after, and as long term results of work and exercise. Prerequisite: BIOL 2213 and BIOL 2211L.

**KINS3163 Exercise Physiology: Theory and Application (Sp, Fa)** Examination of the changes during childhood and adolescence of physiological responses to exercise. The exploration includes the study of the maturation of the body's functional capacities as it relates to exercise. Designed for Physical Education Teacher Education majors. Prerequisite: BIOL 2443 and BIOL 2441L and KINS 2223; for K-12 or P-12 physical education majors only.

**KINS3163H Honors Exercise Physiology: Theory and Application (Sp, Fa)** Examination of the changes during childhood and adolescence of physiological responses to exercise. The exploration includes the study of the maturation of the body's functional capacities as it relates to exercise. Designed for Physical Education Teacher Education majors. Prerequisite: BIOL 2443 and BIOL 2441L and KINS 2223; for K-12 physical education majors only.

**KINS3353 Mechanics of Human Movement (Sp, Su, Fa)** An introduction to basic analysis of motor skills. No credit given toward major in Zoology. Prerequisite: BIOL 2443 and BIOL 2441L. (Same as BIOL 3353)

**KINS3353H Honors Mechanics of Human Movement (Sp, Su, Fa)** An introduction to basic analysis of motor skills. No credit given toward major in Zoology. Prerequisite: BIOL 2443 and BIOL 2441L. (Same as BIOL 3353)

**KINS3373 Philosophical/Sociocultural Impact on Kinesiology (Sp, Su, Fa)** An investigation of the philosophical and sociocultural impact on Kinesiology.

**KINS3533 Laboratory Techniques (Sp, Fa)** Practical experience in testing physical fitness in both the laboratory and non-laboratory settings. Prerequisite: KINS 3153.

**KINS3533H Honors Lab Techniques (Sp, Fa)** Practical experience in testing physical fitness in both the laboratory and non-laboratory settings. Prerequisite: KINS 3153.

**KINS405V Independent Study (Sp, Su, Fa) (1-3)** Provides students an opportunity to pursue special study of research problems. May be repeated for up to 12 hours of degree credit.

**KINS405VH Honors Independent Study (Sp, Su, Fa) (1-6)** Provides students an opportunity to pursue special study of research problems. May be repeated for up to 12 hours of degree credit.

**KINS4323 Analytical Basis of Movement Science (Sp)** Study of the practical applications of biomechanical and physiological principles. Prerequisite: KINS 3353 and KINS 3533.

**KINS4413 Organization, Management, and Marketing Skills for the Kinesiology Professional (Sp, Fa)** Organizational policies, management principles, and marketing skills for the Kinesiology professional.

**KINS4773 Performance and Drugs (Sp)** The pharmacological and physiological effects of ergogenic aids upon the athlete and performance coupled with the ethical and moralistic viewpoints of drug taking. Practical laboratory experiences are provided with pertinent statistical surveys of athletes; their drug taking habits and relevant psychological impact on performance. Prerequisite: KINS 3153.

**KINS4833 Exercise Applications for Special Populations (Fa)** The study of the effects of exercise, exercise training, and other stressors in special groups. A detailed study of the biomechanical and physiological effects of exercise on the elderly, the diabetic, the post-coronary, and the individual with functional limitations. Prerequisite: KINS 3353 and KINS 3533.

**KINS4833H Honors Exercise Applications for Special Populations (Fa)** The study of the effects of exercise, exercise training, and other stressors in special groups. A detailed study of the biomechanical and physiological effects of exercise on the elderly, the diabetic, the post-coronary, and the individual with functional limitations. Prerequisite: KINS 3353 and KINS 3533.

**KINS4903 Internship in Exercise Science (Sp, Fa)** Provides opportunities for students in Exercise Science to gain experience in clinics, hospitals, fitness centers, athletic training facilities or related settings. Enrollment is limited to students in exercise science having taken KINS 3353 and KINS 3533. Prerequisite: KINS 3353 and KINS 3533. May be repeated for up to 12 hours of degree credit.

**KINS5212 Athletic Training Clinical I - Application of Athletic Preventive Devices (Su)** This course will serve as an introduction to the athletic training clinical program. Procedures and policies of the clinical program and application of athletic preventive devices will be included as well. Prerequisite: Admission to the graduate program in athletic training.

**KINS5222 Athletic Training Clinical II - Evaluation Lab - Lower Extremity (Fa)** This course will serve as a process for monitoring student's progression of athletic training proficiencies, acquire clinical hours under the direct supervision of a certified athletic trainer, and reinforce the evaluation skills of gait, lower extremity, and spine/pelvis. Prerequisite: KINS 5212.

**KINS5232 Athletic Training Clinical III - Evaluation - Upper Extremity (Sp)** This course will serve as a process for monitoring student's progression of athletic training competencies, acquire clinical hours under the direct supervision of a certified athletic trainer, and reinforce the evaluation skills of the upper extremities, head, neck, and posture. Prerequisite: KINS 5222.

**KINS5242 Athletic Training Clinical IV - Emergency Procedures/Modality Lab (Su)** This course will serve as a process for monitoring student's progression of athletic training competencies, acquire clinical hours under the direct supervision of a certified athletic trainer, and reinforce and instruct new emergency procedures and serve as a lab for therapeutic modalities. Prerequisite: KINS 5232.

**KINS5252 Athletic Training Clinical V - Rehabilitation Lab (Fa)** This course will serve as a process for monitoring student's progression of athletic training competencies, acquire clinical hours under the direct supervision of a certified athletic trainer, and reinforce techniques and applications of therapeutic exercise and rehabilitation. Prerequisite: KINS 5242

**KINS5262 Athletic Training Clinical VI - Athletic Training Seminar (Sp)** This course will serve as a process for monitoring student's progression of athletic training competencies, acquire clinical hours under the direct supervision of a certified athletic trainer, and serve as a capstone course validating the athletic training clinical

proficiencies and prepare students for the NATABOC certification exam and future employment. Prerequisite: KINS 5252.

**KINS5323 Biomechanics I (Fa)** Intended to serve as an introduction to biomechanics and focuses on scientific principles involved in understanding and analyzing human motion.

**KINS5333 Instrumentation in Biomechanics (Odd years, Sp)** The application of knowledge and skills necessary for data collection for sports analysis. Provides valuable information on instrumentation used specifically in biomechanics. Prerequisite: KINS 5323.

**KINS5363 Evaluation Techniques of Athletic Injuries - Upper Extremity (Sp)** Use of scientific assessment methods to recognize and evaluate the nature and severity of athletic injuries to the upper extremities, trunk, and head. Prerequisite: Admission to graduate athletic training program.

**KINS5373 Evaluation Techniques of Athletic Injuries - Lower Extremity (Fa)** Use of scientific assessment methods to recognize and evaluate the nature and severity of athletic injuries to the hip and lower extremities. Prerequisite: Admission to graduate athletic training program.

**KINS5423 Assessment and Prescriptive Programming in Adapted KINS (Odd years, Sp)** Instruction in the assessment, prescription, and use of instruction methods, materials, and equipment relevant to specific handicapping conditions in the adapted physical education setting.

**KINS5453 Therapeutic Modalities in Athletic Training (Fa)** Contemporary therapeutic modalities used in managing athletic injuries. Modalities covered are classified as thermal agents, electrical agents, or mechanical agents. Emphasis is placed on their physiological effects, therapeutic indications (and contraindications), and clinical application. Prerequisite: Admission to graduate athletic training program.

**KINS5463 Therapeutic Exercise and Rehabilitation of Athletic Injuries (Fa)** A systematic approach to exercise program development, techniques, indications and contraindications of exercise, and progression as related to athletic injury, prevention, and return to play guidelines. Prerequisite: Admission to graduate athletic training program.

**KINS5473 Administration in Athletic Training (Su)** Administrative components of athletic training. Basic concepts of legal liability, leadership and management principles, financial management, day to day scheduling and supervision, maintenance, and general administration. Prerequisite: Admission to graduate athletic training program.

**KINS5483 Medical Conditions in Athletic Training (Fa)** This course will provide a collection of knowledge, skills, and values that the entry-level certified athletic trainer must possess to recognize, treat, and refer, when appropriate, the general medical conditions and disabilities of athletes and others involved in physical activity. Prerequisite: Admission to the graduate athletic training program or permission of instructor.

**KINS5493 Practicum in Adapted Physical Education (Irregular)** Deals with the application of skills, knowledge and concepts necessary for planning, organizing and conducting adapted physical education programs through supervised field experiences.

**KINS5513 Physiology Exercise I (Fa)** A study of the foundation literature in exercise physiology. Emphasis is placed on the muscular, cardiovascular, and respiratory systems.

**KINS5523 Muscle Metabolism in Exercise (Sp)** A study of the metabolic changes that occur in muscle as a result of exercise, exercise training, and other stressors. Prerequisite: KINS 5513 or equivalent.

**KINS5533 Cardiac Rehabilitation Program (Odd years, Fa)** An examination of the concepts, design, and implementation of cardiac rehabilitation programs. Emphasis on exercise programs but reference to nutrition, psychology, and other lifestyle interventions.

**KINS5543 Cardiovascular Function in Exercise (Fa)** Study of the effects of exercise training and other stressors on the cardiovascular system. Detailed study of the components of the cardiovascular system and the responses and adaptations of those components to selected stimuli. Prerequisite: KINS 5513 or equivalent.

**KINS5593 Practicum in Laboratory Instrumentation (Su, Fa)** Practical experience in testing physical fitness utilizing laboratory equipment. Objective is to quantify physiological parameters, leading to the individualized exercise prescription.

**KINS5613 Physical Dimensions of Aging (Even years, Sp)** This course will focus on the physiological changes with healthy aging, pathophysiology of age-related diseases, testing issues, exercise interventions, and the psychosocial aspects of aging. Prerequisite: KINS 5513.

**KINS5643 Motor Learning (Sp)** Concepts of motor learning and control are presented. Attention is given to an analysis of the literature in movement control, motor behavior, and motor learning.

**KINS574V Internship (Sp) (1-6)** May be repeated for up to 6 hours of degree credit.

**KINS5753 Sport Psychology (Su)** Investigation of historical and contemporary research in sport psychology. Prerequisite: HKRD 5353.

**KINS5773 Performance and Drugs (Sp)** The pharmacological and physiological effects of ergogenic aids upon the athlete and performance coupled with the ethical and moralistic viewpoints of drug taking. Practical laboratory experiences are provided with pertinent statistical surveys of athletes; their drug taking habits and relevant psychological impact on performance. Prerequisite: BIOL 2213 and BIOL 2211L or equivalent.

**KINS589V Independent Research (Sp, Su, Fa) (1-3)** Development, implementation, and completion of basic or applied research project. Prerequisite: M.S. degree program in exercise and movement sciences and HKRD 5353 and EDFD 5393.

**KINS600V Master's Thesis (Sp, Su, Fa) (1-6)**

**KINS605V Independent Study (Sp, Su, Fa) (1-3)** Provides students with an opportunity to pursue special study of educational problems. May be repeated for up to 3 hours of degree credit.

**KINS6323 Biomechanics II (Even years, Sp)** Analysis of human movement with emphasis on sports skills by application of principles of anatomy, kinesiology, and cinematographical analysis. Prerequisite: KINS 5323.

**KINS6343 Physiology of Exercise II (Even years, Su)** Detailed study of the body systems affected by exercise, the functions of these systems during exercise, the effects of age, sex, body type, and nutrition on capacity for exercise, the techniques of assessing work capacity, and a critical analysis of research literature in this area.

**KINS674V Internship (Irregular) (1-3)** May be repeated for up to 3 hours of degree credit.

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### Landscape Architecture (LARC)

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**LARC1003 Basic Course in the Arts: The American**

**Landscape (Sp, Fa)** Mankind's changing attitudes toward urban and rural outdoor spaces and their aesthetic and cultural values.

The origins of the environmental/conservation movement and the development of an American land ethic. Appreciation of the relationship of the natural and historic landscape to the arts and the aesthetic importance of open space.

**LARC1011 Leadership by Design I (Fa)** Introduces time management, study strategies, promotes solutions for maintaining personal health, and develops communication and leadership skills intended to benefit education, career, and the community.

**LARC1021 Leadership by Design II (Sp)** Introduces time management, study strategies, promotes solutions for maintaining personal health, and develops communication and leadership skills intended to benefit education, career, and the community. Continuation of LARC 1011.

**LARC1211 Introduction to Landscape Architecture I (Fa)**

This course is an interdisciplinary introduction to basic principles of design, the natural landscape, urbanism and the public realm. Lecture is one hour per week. Corequisite: LARC 1315.

**LARC1221 Introduction to Landscape Architecture II (Sp)**

Theoretical, formal, and constructive principles and their impact in the design discipline, modernism and after. Introduction to the intellectual and philosophical foundations of landscape architecture. Lecture 1 hour per week. Prerequisite: LARC 1211 and LARC 1315. Corequisite: LARC 1325.

**LARC1315 Landscape Architecture Design I (Fa)** Theory and craft of seeing, drawing, and model-building to record and communicate a design. Basic design principles with architectural and natural geometries are introduced and employed. Studio and lecture. Corequisite: LARC 1211.

**LARC1325 Landscape Architecture Design II (Sp)** Basic concepts of spatial, visual and experiential analysis are used in the investigation and evaluation of designed landscapes. Introduction to three-dimensional spatial organization systems and supporting principles. Continued drawing exercises and analysis graphics leading to design conceptualization. Studio and lecture. Corequisite: LARC 1221. Prerequisite: LARC 1315 and LARC 1211.

**LARC2113 Design Communications I (Fa)** Aimed at visualization of the design process from conception to completion. Provides a means to effectively communicate, evaluate, synthesize and refine ideas. Aimed at teaching various levels of graphics associated with the design process. Communication of ideas through various techniques is explored and the computer is introduced as a graphics tool and as a means of organizing ideas in a creative, yet orderly, fashion.

**LARC2123 Design Communications II (Sp)** Continuation of LARC 2113 with a focus on computer technologies in two-dimensional graphic representation and three-dimensional modeling. Course includes an introduction to computer system use and software such as: CAD, GIS, Photoshop, desk-top publishing, Word, and other professional office programs. Studio and lecture.

**LARC2336 Landscape Architecture Design III (Fa)**

Introduction to design process(es) which responds to site and context.

Reinforcement of design principles and organization systems applied to small scale design projects. Studio and lecture. Prerequisite: LARC 1221 and LARC 1325.

**LARC2346 Landscape Architecture Design IV (Sp)** (Formerly LARC 3345) Expansion of abilities to analyze existing conditions of site and develop methods for interpreting and synthesizing information and perceptions into spatial design proposals. Emphasis on design form and the use of meaning and landscape narrative applied to increased scale projects within a larger or more complex context. Studio and lecture. Prerequisite: LARC 2336 and LARC 3413.

**LARC2714 Landscape Architecture Construction I (Sp)** (Grading) Introduction to landscape architectural construction with an emphasis on grading, earthwork computations, and technical drawing skills. Introduction to roadway alignment, the land survey system, and construction documents. Lecture and laboratory.

**LARC302V Special Studies (Irregular) (1-6)** Individual or group study and practicum and travel involving landscape design, history, and environmental analysis. May be repeated for up to 6 hours of degree credit.

**LARC302VH Honors Special Studies (IR) (1-6)** Individual or group study and practicum and travel involving landscape design, history and environmental analysis.

**LARC303V Special Projects (Irregular) (1-6)** Design implementation, study, practicum, and preparation of working drawings.

**LARC303VH Honors Special Projects (IR) (1-6)** Design implementation, study, practicum, and preparation of working drawings.

**LARC3356 Landscape Architecture Design V (Fa)** (Formerly LARC 3355) Investigation of social behavior as applied to program and design that serves human needs. Projects reflect increased scope, scale, and resolution with a detailed design component. Studio and lecture. Prerequisite: LARC 2346 and LARC 2714; and acceptance into the professional program.

**LARC3366 Landscape Architecture Design VI (Sp)** (Formerly LARC 4365) Investigation of ecological determinism, historic and contemporary planning, and sustainable design as distinct approaches to landscape architecture. Studio and lecture. Prerequisite: LARC 3356.

**LARC3366H Honors Landscape Architecture Design VI (Sp)** Investigation of ecological determinism, historic and contemporary planning, and sustainable design as distinct approaches to landscape architecture. Studio and lecture. Prerequisite: LARC 3356.

**LARC3413 History of Landscape Architecture (Fa)** Analysis of the interaction between existing landscapes and human cultural development as reflected in the meaning and organization of landscape designs at community and project scales from the neolithic period to the mid-nineteenth century.

**LARC3413H Honors History of Landscape Architecture (Fa)** Analysis of the interaction between existing landscapes and human cultural development as reflected in the meaning and organization of landscape designs at community and project scales from the neolithic period to the mid-nineteenth century.

**LARC3724 Landscape Construction II (Fa)** Introduction to landscape architectural materials and methods of construction and assembly. Emphasis on material properties and how those properties affect the materials use in the landscape and interactions with other materials. Introduction to dimensioning and layout systems and parking requirements with increased complexity of construction documents. Lecture and laboratory.

**LARC3734 Landscape Architecture Construction III (Sp)** (Structures) Introduction into the design and fabrication methods of structures in the landscape. Emphasis on statics in calculating sizes and selection of materials for free-standing and retaining walls, and wooden structures. Advanced technical drawing component and computer integration of drawing production. Lecture and laboratory. Prerequisite: LARC 3723.

**LARC3734H Honors Landscape Architecture Construction III (Sp)** (Structures) Introduction into the design and fabrication methods of structures in the landscape. Emphasis on statics in calculating sizes and selection of materials for free-standing and retaining walls, and wooden structures. Advanced technical drawing component and computer integration of drawing production. Lecture and laboratory. Prerequisite: LARC 3723.

**LARC3821 Study Abroad Preparation (Sp)** Orientation to the geography, history, and culture of the countries and sites to be studied in the study abroad program. Lecture.

**LARC3914 Planting Design I (Fa)** Introduction to small scale projects involving use of plant materials in relation to other landscape elements, formulation of a vocabulary of plant materials and preparation of integrated planting plans and applicable specifications. Includes laboratory. Prerequisite: HORT 3103.

**LARC3924 Ecological Design (Irregular)** Continuation of LARC 3914 emphasizing a change in scale of projects to include medium and large scale projects, and increasing complexity in dealing with more complicated and varied planting designs and

applicable specifications. Includes laboratory. Prerequisite: LARC 3914 and HORT 3103.

**LARC3933 Cultural Landscape Studies (Su)** The examination of landscape forms, and their historic and evolutionary development. Includes study of cultural, political, and site context influences. Required field trip component of study abroad. Prerequisite: LARC 3413 and LARC 3821.

**LARC4123 Urban Form Studies (Su)** The examination of urban, village, and suburban form and its influencing forces. Includes study of cultural forces, technological developments, and physical shape, scale, and materials that define urban areas. Required field trip component of study abroad. Prerequisite: LARC 3413 and LARC 3821.

**LARC4376 Landscape Architecture Design VII (Fa)** (Formerly LARC 4375) Synthesis of all previous course work; an introduction to the theory and practice of larger scale planning with an emphasis on design of systems in urbanizing environments. Studio and lecture. Prerequisite: LARC 3366 and LARC 4413.

**LARC4376H Honors Landscape Architecture Design VII (Fa)** Synthesis of all previous course work; an introduction to the theory and practice of larger scale planning with an emphasis on design of systems in urbanizing environments. Studio and lecture. Prerequisite: LARC 3366 and LARC 4413.

**LARC4383 Senior Project Preparation (Sp)** (Formerly LARC 4381) Definition and planning of personally selected senior demonstration project. Requires full documentation of topical research, program development, site data collection, site analysis, and site project base maps. Studio and lecture. Prerequisite: LARC 4376

**LARC4383H Honors Senior Project Preparation (Sp)** Definition and planning of personally selected senior demonstration project. Requires full documentation of topical research, program development, site data collection, site analysis, and site project base maps. Studio and lecture. Prerequisite: LARC 4376.

**LARC4413 Contemporary Landscape Architecture (Sp)** Critical study and analysis of landscape architecture from mid-nineteenth century to the present. Emphasis on the philosophical and design theories that have influenced the form of gardens, parks, and cities.

**LARC4413H Honors Contemporary Landscape Architecture (Sp)** Critical study and analysis of landscape architecture from mid-nineteenth century to the present. Emphasis on the philosophical and design theories that have influenced the form of gardens, parks, and cities.

**LARC4714 Landscape Architecture Construction IV (Fa)** (Systems) Introduction to systems of landscape architectural construction including stormwater management, lighting, irrigation, water features, and erosion control. Emphasis on an advanced grading and landform manipulation skills, and stormwater system design and calculations. Significant integration of computer generated drawings. Lecture and laboratory. Prerequisite: LARC 2714.

**LARC4714H Honors Landscape Architecture Construction IV (Fa)** (Systems) Introduction to systems of landscape architectural construction including stormwater management, lighting, irrigation, water features, and erosion control. Emphasis on an advanced grading and landform manipulation skills, and stormwater system design and calculations. Significant integration of computer generated drawings. Lecture and laboratory. Prerequisite: LARC 2714.

**LARC4743 Site Planning for Non-Landscape Architects (Irregular)** Problems in analysis and synthesis of elements used in landscape with emphasis on grading and drainage and the relationship of structure to site. Lecture and laboratory 6 hours per week.

**LARC5043 Landscape Architecture Seminar (Irregular)** The role of the landscape architect in contemporary society; how this is affected by technological change and awareness of ecological problems. Group discussions, individual research projects, and guest lectures. Prerequisite: Fourth-year standing.

**LARC5053 Historic Landscape Preservation (Irregular)** Survey of historic preservation as a profession and the emerging cultural landscape preservation movement. Introduction to preservation principles as described by the Secretary of the Interiors Standards and Guidelines. Analysis of case studies will reinforce basic philosophies and introduce preservation approaches. Prerequisite: LARC 3413 and LARC 4413.

**LARC5063 Alternative Stormwater Management (Irregular)** Introduction to the role of alternative stormwater management techniques toward a more sustainable development to include constructed wetlands, bioswales, rain water harvesting, green roofs, and other stormwater reduction techniques. Emphasis on multidisciplinary team approach to problem solving. This course is open to non-majors and includes both lecture and laboratory time.

**LARC5386 Landscape Architecture Design VIII (Senior Demonstration Project) (Fa)** (Formerly LARC 5385) Advanced design studio with an emphasis on individual or team research and design resolution. Includes all aspects of design process: inventory, programming, graphic documentation, formal oral presentation, and

a written report. Prerequisite: LARC 4383 and LARC 4376.

**LARC5613 Landscape Architectural Practice and Project Manual (Sp)** Professional responsibilities and related aspects of landscape architecture practice: ethics; office organization; client, contractor and landscape architect relationships; legal issues, contracts and documents; regulations; review of bidding and contractual documents.

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### Latin American Studies (LAST)

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**LAST2013 Latin American Studies (Fa)** This course provides an interdisciplinary introduction to Latin America. Drawing on Latin American literature, history, sociology, and political science, the course examines the broad forces that have shaped the region. (Same as ANTH 2013)

**LAST3013 Modern Latin American Literature in Translation (Irregular)** This course introduces the rich cultural diversity and sociohistorical complexity of Latin America, through the exploration of outstanding and representative examples of the region's modern literature.

**LAST399VH Honors Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Junior standing.

**LAST4003 Latin American Studies Colloquium (Sp)** An interdepartmental colloquium with an annual change in subject of investigation, required of all Latin American studies majors. Prerequisite: Sophomore standing for Latin American studies majors and honors students. May be repeated for up to 6 hours of degree credit.

**LAST4003H Honors Latin American Studies Colloquium (Sp)** An interdepartmental colloquium with an annual change in subject of investigation, required of all Latin American studies majors. Prerequisite: sophomore standing for Latin American studies majors and honors students. May be repeated for up to 6 hours of degree credit.

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### Latin (LATN)

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**LATN1003 Elementary Latin I (Fa)** The rudiments of classical Latin, with concentration on grammar, vocabulary, and syntax. Short selections from ancient authors lead to basic reading ability.

**LATN1013 Elementary Latin II (Sp)** A continuation of the rudiments of classical Latin, with concentration on grammar, vocabulary, and syntax. Short selections from ancient authors lead to basic reading ability.

**LATN2003 Petronius' Satyricon (Fa)** Development of reading skills through selections from Satyricon, and an introduction to imperial history and culture through critical study of the novel in translation.

**LATN2013 Catullus (Sp)** Development of reading skills through selections from Catullus' poems, and an introduction to the culture and history of the late republic through critical study of Catullus in translation and secondary works.

**LATN3003 Virgil and Ovid (Fa)** Selections from the Aeneid and/or the Metamorphoses, and an introduction to Roman literary history through the critical study of these works in translation. Prerequisite: LATN 2013 or equivalent.

**LATN3013 Caesar (Sp)** Selected readings from Caesar's commentaries on Gallic or Civil Wars, and an overview of Republican political and military history through the critical study of the commentaries in translation and secondary works. Prerequisite: LATN 3003 or equivalent.

**LATN3063 Intensive Elementary Latin Reading (Su)** Overview of Latin grammar, vocabulary and syntax, leading to reading prose texts. For undergraduates who want short, intensive introduction to Latin and graduate students working towards reading proficiency. Successful completion fulfills graduate student research reading proficiency requirement. LATN 3063 alone cannot fulfill the Foreign Language requirement in Fulbright College. No credit for this course and LATN 1003 and/or 1013.

**LATN4003 Roman History (Irregular)** Selections from Sallust, Livy, Tacitus, or Suetonius. An overview of Roman historiography through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent.

**LATN4043 Roman Elegy (Irregular)** Selections from Propertius, Tibullus, or Ovid. An overview of the genre through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent.

**LATN4063 Roman Pastoral and Lyric (Irregular)** Selections from Catullus, Virgil's Eclogues, Horace's Odes, or Calpurnius Siculus. An overview of the two genres through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent. May be repeated for up to 6 hours of degree credit.

**LATN4073 Roman Novel (Irregular)** Selections from Petronius or Apuleius. An overview of the genre through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent.

**LATN4083 Roman Oratory (Irregular)** Selections from the

orations and theoretical works of Cicero, Seneca the Elder, or Quintilian. An overview of the genre through the critical study of complete works in translation and secondary works. Prerequisite: LATN 3013 or equivalent. May be repeated for up to 6 hours of degree credit.

**LATN475V Special Investigations (Irregular) (1-6)**

**LATN5633 Medieval Latin (Irregular)** Selections from medieval writers from the 4th to the 17th century. Prerequisite: LATN 3003 or equivalent.

**LATN575V Special Investigations (Irregular) (1-6)**

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**Law (LAWW)**

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**LAWW400V Entertainment Law (Irregular) (1-6)** Examines the legal principles and relationships of the entertainment industry, with a primary emphasis on the music industry; provides an introduction to the practice of entertainment law and the negotiation of entertainment contracts; highlights a variety of legal and practical issues that arise when representing clients in the entertainment industry.

**LAWW4012 Legal Research & Writing II (Sp)** An introduction to the persuasive writing for trial and appellate courts. Emphasis will be placed on intermediate library research techniques and basic legal research using computers. Students will also engage in brief-writing and appellate argumentation.

**LAWW4013 Legal Research & Writing I (Fa)** An introduction to the special problems posed by the legal analysis and the expression of the results of that process. The primary emphasis will be on basic legal analysis techniques, basic legal writing skills, and proper citation form. Students will complete a series of writing assignments.

**LAWW4022 Legal Research & Writing III (Sp, Su, Fa)** Small section experience (15 students per section) in legal research and writing; advanced legal research techniques and advanced writing assignments. Courses certified as LRW III courses must include the writing process as the central focus of the class experience. Must be taken in the 3rd or 4th semester. Topic varies; students may take more than one topic but must take at least one LRW III course.

Prerequisite: LAWW 4013 and LAWW 4012. May be repeated for up to 10 hours of degree credit.

**LAWW4023 Contracts I (Sp, Su, Fa)** Formation and enforcement by litigation and commercial arbitration of commercial and family agreements. Mutual assent or consideration; third-party beneficiaries; assignments; joint obligation; performance; anticipatory breach; discharge of contractual duties; and the Statute of Frauds.

**LAWW4033 Contracts II (Sp, Su, Fa)** Contract interpretation and enforcement, remedies for breach, including anticipatory breach, justifications for breach, third party beneficiaries, assignment and delegation. Prerequisite: LAWW 4023

**LAWW4053 Property I (Sp, Su, Fa)** Emphasis is on real property. Basic concepts are covered, including property rights in lost and found articles (general property concepts), types and historical origins of estates, and other interests in land. Property transfer techniques, such as gifts, leases (landlord and tenant) and the sale of land are also considered. Land transfer techniques, including the land sale contract, the deed, the recording system, and methods of real property title assurance are discussed. Certain aspects of land use controls explored briefly.

**LAWW4073 Criminal Law (Sp, Su, Fa)** Deals with the questions of what conduct society punishes through a criminal code and of the appropriate punishment for the forbidden conduct. In this context the course includes an analysis of the theories of punishment, the definitions of various crimes, the defenses available to one charged with criminal conduct, and the limitations placed by the Constitution on governmental power in the criminal law area. Throughout the course, special emphasis is placed on the appropriate role of the legislature and the courts, and the problem faced by them in devising and administering a criminal code.

**LAWW4103 Civil Procedure I (Sp, Su, Fa)** Study of the process of civil litigations from such preliminary matters as court selection and jurisdiction to appeal and collateral attack of final judgments. Some attempt is made to cover the antecedents of modern procedure; where appropriate, suggestions for reform are developed in class discussion. Emphasis is on the Federal Rules of Civil Procedures and on code pleading and common law procedure used in state court systems.

**LAWW4144 Torts (Sp, Su, Fa)**

**LAWW4153 Property II (Sp, Su, Fa)** Emphasis is on real property. Basic concepts are covered, including property rights in lost and found articles (general property concepts), types and historical origins of estates, and other interests in land. Property transfer techniques, such as gifts, leases (landlord and tenant), and the sale of land are also considered. Land transfer techniques, including the land sale contract, the deed, the recording system, and methods of real property title assurance are discussed. Certain aspects of land use controls are explored briefly.

**LAWW4173 Criminal Procedure (Sp, Su, Fa)** Concerned with the legal steps through which a criminal proceeding passes,

commencing with the initial investigation of a crime and concluding with the release of the defendant. Does not deal exclusively with constitutional problems, although considerable time is spent on them. Recent Supreme Court decisions receive special emphasis. Criminal Procedure does not deal with criminal tactics or with many of the special problems relating to the introduction of evidence at the trial.

**LAWW4203 Civil Procedure II (Sp, Su, Fa)** Study of the process of civil litigations from such preliminary matters as court selection and jurisdiction to appeal and collateral attack of final judgments. Some attempt is given to cover the antecedents of modern procedure; and where appropriate, suggestions for reform are developed in class discussion. Emphasis is on the Federal Rules of Civil Procedure and on code pleading and common law procedure used in state court systems.

**LAWW4294 Business Organizations (Sp, Su, Fa)** Course is constructed around different forms of business organizations, with emphasis on agency and partnership law, and corporation law.

**LAWW4442 Law & Accounting (Irregular)** Study of basic accounting principles and their importance to attorneys engaged in business related activities. Topics covered include the fundamental accounting equation, the nature of accrual accounting, understanding financial statements, and accounting for assets and liabilities. Also a review of basic principles associated with financial statement analysis and valuation principles. Intended for students with little or no business training, and may not be taken for credit by students who have previously earned 6 or more hours of undergraduate or graduate credit in accounting courses.

**LAWW4993 Pre-Trial Practice (Sp, Su, Fa)** Develops fundamental lawyer's skills using role-play in simulation exercises that are videotaped and critiqued. Focuses on development of case theory, fact gathering, use of discovery tools, and case planning. Prerequisite: Successful completion of Civil Procedure I, Civil Procedure II, and Criminal Procedure.

**LAWW500V Special Topics (Irregular) (1-18)** Included under this heading will be a variety of variable credit law courses taught by law faculty on topics that are not included elsewhere in the curriculum. May be repeated for up to 18 hours of degree credit.

**LAWW5013 Professional Responsibility (Irregular)** Role of the lawyer as counselor, advocate, and public servant; obligation to society of the individual lawyer and the profession as a whole; ethical problems of the profession; representation of the unpopular cause and the desirable client, lawyers' obligation to law reform; lawyer and the press; the lawyer in public service; the aspects of law office management.

**LAWW5023 Remedies (Irregular)** Covers equity (jurisdiction and powers of courts of equity, injunctions, including adequacy of legal remedies, balancing of equities, interests protected, and defenses), damages (compensatory, exemplary, and nominal damages; direct and consequential damages; mitigation; special application in contract and tort actions) and restitution (relief afforded by the judicial process, to prevent unjust retention of benefits).

**LAWW5024 Remedies (Irregular)** Covers equity (jurisdiction and powers of courts of equity, injunctions, including adequacy of legal remedies, balancing of equities, interests protected, and defenses), damages (compensatory, exemplary, and nominal damages; direct and consequential damages; mitigation; special application in contract and tort actions) and restitution (relief afforded by the judicial process, to prevent unjust retention of benefits).

**LAWW5063 Education Law (Irregular)** Study of law as it applies to public education in America, including the theory of compulsory education, constitutional rights of students and teachers, school financing, equal opportunity in education.

**LAWW5073 Domestic Relations (Irregular)** Devoted primarily to the problems generated by family relationships. There is a large section on formation and dissolution of marriage. Substantial time is also given to paternity and legitimacy, obligations toward and of children, custody, adoption, guardianship, general property law as it is affected by family relationships, and divorce and custody in the federal system (focusing primarily on enforceability of degrees in one state by courts sitting in another state).

**LAWW5083 First Amendment (Irregular)** An intensive examination of the legal issues arising under the First Amendment to the United States Constitution, with an emphasis on basic free speech doctrines and the dilemmas posed by interplay between the free exercise and establishment clauses.

**LAWW5093 Solo Practice Planning (Irregular)** Combines elements of professional responsibility and law practice management. This course will satisfy the skills requirement.

**LAWW510V Law: Study Abroad (Su)** (1-6) Open to law students studying abroad in officially sanctioned programs.

**LAWW5114 Constitutional Law (Irregular)** An introduction to the basic principles of constitutional law and to current constitutional doctrines and problems. The primary focus will be on the structure of the federal system and on the rights of individuals under the Due Process and Equal Protection clauses of the Fifth and Fourteenth Amendments.

**LAWW5133 Real Estate Transactions (Sp, Su, Fa)** Focuses on real estate transfer, real estate finance and real estate development. Issues relating to the sale of land and conveyances of real property, mortgages and the planning, financing, constructing and marketing of modern real estate developments are treated.

**LAWW5163 Administrative Law (Sp, Su, Fa)** Course is constructed around Federal materials, but with some state references. Considers the origin and constitutional basis for the administrative process; executive and legislative controls with particular emphasis upon the judicial "control" of the administrative process (delegations, procedural and substantive due process, judicial assistance and enforcement and review of administrative decisions).

**LAWW5173 Insurance (Sp, Su, Fa)** A study of casualty, fire, and life insurance. Major areas include the duty to defend; duty to settle within policy limits; the definition of what is covered under the policy; insurance marketing; insurable interests; the measure of recovery; disputes between insurers; defenses such as fraud, concealment, and non-cooperation; and government regulation of insurance.

**LAWW5183 Drafting Legal Documents (Irregular)** This course will study and practice the principles applicable to drafting of non-litigation documents, such as contracts, wills, and legislation. These include organization and categorization of information, definitions, testing of substantive provisions for completeness and consequences, and choices and precision of language.

**LAWW5203 Discrimination in Employment (Irregular)** An examination of federal constitutional, statutory, and administrative restrictions that prohibit or limit employers, unions and employment agencies from discriminating on the basis of race, sex, religion, age, national origin and color. In addition to the substantive scope of federal law, emphasis given to enforcement procedures and remedies.

**LAWW5213 Business Planning (Irregular)** Synthesis of legal principles dealing with taxation and form of business organizations to provide guidance in choosing form and operating business entities.

**LAWW5223 Negotiations (Irregular)** The course will provide instruction in professional skills related to various responsibilities which lawyers are called upon to meet, such as trial and appellate advocacy, alternate methods of dispute resolution, counseling, interviewing, negotiating, problem solving, factual investigation, organization and management of legal work, and drafting, and in analytical processes for applying those skills in ethical faction. Course will satisfy the skills requirement.

**LAWW5233 Interviewing and Counseling (Irregular)** Course provides instruction in practical aspects of client representation such as drafting, interviewing, counseling, fact gathering, negotiation, and advocacy, and in analytical processes for applying those skills in ethical fashion. In addition to teaching theory attached to skills, the course provides students with practice in these areas through the use of simulated client problems. Course satisfies skills requirement.

**LAWW5243 Business and Commercial Torts (Irregular)** Course will explore the legal relationship between competition and intangible property. Covers the spectrum of private remedies for competitive wrongs. Course will examine laws relating to such business and commercial torts as unfair competition, misappropriation of trade secrets, trademark infringement, false advertising, etc. Course is designed for students planning to practice in the areas of commercial, corporate, business or intellectual property law.

**LAWW5303 International and Domestic Sales and Leasing (Sp, Su, Fa)** Study of Articles 2 and 2A of the Uniform Commercial Code and the United Nations Convention on Contracts for the International Sale of Goods\*

**LAWW5313 Negotiable Instruments (Sp, Su, Fa)** Study of Articles 3 and 4 of the Uniform Commercial Code dealing with negotiable instruments.

**LAWW533V Election Law (Irregular) (1-3)**

**LAWW5363 Securities Regulation (Sp, Su, Fa)** Regulation of issuance of and trading in stocks, bonds and other security by federal and state agencies, with particular reference to the SEC. Not offered every year.

**LAWW5504 Decedent's Estates (Sp, Su, Fa)**

**LAWW5513 Labor Relations in the Private Sector (Sp, Su, Fa)** The right to organize; organization of labor unions; strikes; picketing; boycotts; collective bargaining; collective labor agreements and their enforcement; unfair labor practices by employers and by unions; the union member and his union; state labor relations legislation; the National Labor Relations Act and the Labor Management Relations Act. Not offered every year.

**LAWW5994 Debtor-Creditor Relations (Sp, Su, Fa)** Study of Article 9 of the Uniform Commercial Code and of the remedies of unsecured creditors.

**LAWW6013 Alternative Dispute Resolution (Sp, Su, Fa)** Deals with the alternative to formal litigation for resolving various types of disputes. The alternatives considered include negotiation, mediation and conciliation, arbitration, "rent-a-judge," and other special procedures. Areas of application include contract and tort



disputes, community problems, labor relations, and medical practice controversies. This course will satisfy the skills requirement.

**LAWW602V Independent Legal Research (Sp, Su, Fa) (1-3)** Independent legal research conducted under the supervision of faculty members. Ordinarily a student may not accumulate more than two semester hours of credit for Independent Legal Research. This cumulative maximum may be exceeded only by special permission of the dean, who in exceptional circumstances may approve a cumulative maximum credit of three semester hours of credit for Independent Legal Research.

**LAWW603V Federal Jurisdiction (Sp, Su, Fa) (1-3)** Topics covered usually include constitutional limits on the jurisdiction of Federal courts as well as limitations imposed by Congress. The relations between state courts are problems in diversity and Federal question jurisdiction. Removal procedure is studied, and if time permits, attention is given to venue and related problems.

**LAWW6042 Children and the Law (Irregular)** Topics include children as legal persons, including minors' right to expression under the First Amendment and their participation in decision-making in legal contexts; children's rights and school authority, including constitutional issues in school discipline and religious expression; foster care; termination of parental rights; and adoption.

**LAWW6063 Advanced Evidence (Sp, Su, Fa)** Deals with the use of expert witnesses, forensic sciences and scientific evidence, organization of proof, burden of proof, presumptions, and the law of privileges.

**LAWW607V Conflict of Laws (Sp, Su, Fa) (2-3)** Study of the legal principles involved in problems which have connections with two or more states requiring a choice of law, choice of law in federal courts, and jurisdiction in multi-state situations.

**LAWW6083 Arkansas Civil Practice (Sp, Su, Fa)** A detailed examination of the civil procedure in the Arkansas trial and appellate courts, building on the basic course in civil procedure. Emphasis is placed on the Arkansas Rules of Civil Procedure; state statutes dealing with procedure, jurisdiction, and venue; the division of labor between the circuit and chancery courts; and enforcement of judgments. Differences between Arkansas and federal civil practice are also explored.

**LAWW6093 Basic Evidence (Sp, Su, Fa)** Study of the rules of evidence under which trials are conducted; the methods by which items of evidence and admitted or excluded; relevancy, real evidence, testimonial proof, and hearsay and its exceptions.

**LAWW6103 Jurisprudence (Sp, Su, Fa)** Studies of the ideas and methods of law, regardless of particular questions that might be resolved by the law.

**LAWW611V Moot Court (Sp, Su, Fa) (1-3)**

**LAWW6133 Antitrust Law (Irregular)** Federal anti-trust laws and their relationship to concentrations of economic power in the contexts of monopoly mergers, price fixing, economic boycotts and discrimination, re-sale price maintenance, dealer franchises, and exclusive dealing. Comparative analysis of free enterprise market and government regulated industries. Recommended for second- and third-year students interested in business practice or government service, as well as social welfare, or students with an interest in the subject.

**LAWW6143 Oil and Gas (Sp, Su, Fa)** Study of the law of oil and gas with emphasis on the interests that may be created in oil and gas, the rights of the landowner, provisions in the oil and gas lease, the rights of assignees, and legislation dealing with production and conservation.

**LAWW614V Board of Advocates Credit (Sp, Su, Fa) (1-6)** Members of the Board of Advocates may receive ungraded academic credit, to be awarded in the spring semester of the member's third year in law school, upon completion of duties for the fall and spring semesters.

**LAWW6152 Elder Law Seminar (Irregular)** In-depth treatment of selected problems of elderly persons in seminar format.

**LAWW616V Law Review Credit (Sp, Su, Fa) (1-4)**

**LAWW6182 Advanced Torts: Dignitary and Economic Harm (Irregular)** Course will cover defamation, the rights of privacy (including information privacy) and publicity, harm to family relationships, malicious prosecution and interference with common law civil rights.

**LAWW618V Journal of Food Law & Policy Credit (Sp) (1-5)** Students receive credit for completion of duties on the Law School's publication of The Journal of Food Law & Policy.

**LAWW6192 Workers' Compensation (Sp, Su, Fa)** Study of state legislation providing remedies for workers injured in the course of their employment. Not offered every year.

**LAWW6193 Social Legislation (Sp, Su, Fa)** Examination of the various statutes (exclusive of the employment discrimination laws) governing the rights and responsibilities of employees and employers, including unemployment legislation, COBRA, EPPA, ERISA, FLSA, OSHA, USERRA, and WARN.

**LAWW6203 Trial Advocacy (Sp, Su, Fa)** An introduction to actual trial work and trial techniques through simulated exercises

and the conduct of a mock trial. This course will satisfy the skills requirement.

**LAWW6213 Product Liability (Sp, Su, Fa)** An intensive study of the area including a review of the theories of liability; the concepts

of product and defect; potential defendants; defenses; problems of proof and causation.

**LAWW6233 Federal Income Tax of Individuals (Sp, Su, Fa)** Fundamentals of the federal income taxation of individuals. Topics covered include gross income, deductions, assignments of income, basis, taxation of property transactions, and tax accounting.

**LAWW6243 Federal Estate and Gift Taxation (Sp, Su, Fa)** Fundamentals of the federal estate and gift transfer tax system. Topics covered include the determination of gifts for tax purposes, amounts included in decedents' gross estates, valuation, deductions and credits.

**LAWW6253 Federal Income Taxation of Business Entities (Sp, Su, Fa)** Focus on tax issues in business formation, operation, distributions, and liquidations. Prerequisite: LAWW 6233

**LAWW6262 Estate Planning (Sp, Su, Fa)** Study of the role of lawyers (including ethical considerations) in fact gathering and analysis of data; testamentary and nonprobate transfers; planning for incapacity; Medicaid, income tax, and transfer tax considerations in small and large estates; gift techniques; planning for the surviving spouse; revocable and irrevocable trusts; life insurance; disposition of business interests; and post-mortem tax planning. Unless waived by the instructor, prerequisite for taking the course shall be the successful completion of either Decedents' Estates or Federal Estate and Gift Taxation.

**LAWW629V Advanced Corporations (Irregular) (1-4)** Classical corporations law. Formation of corporations, duties and powers of corporate management, corporate control, shareholder rights, shares, dividends, derivative suits, fundamental changes and dissolution.

**LAWW6303 WTO, NAFTA, and EU Law (Irregular)** The problem of doing business abroad considered from the standpoint of the regulations of foreign trade and direct investment.

**LAWW632V Poverty Law: Theory and Practice (Irregular) (1-6)** History of anti-poverty programs, the constitutional requirements for such programs. Legal and administrative characteristics of major American income-maintenance programs. Topics include the structure of programs, discretion, the protections of clients, social reform groups, and welfare reform. Prerequisite: LAWW 5114.

**LAWW633V Intellectual Property (Irregular) (2-3)** This course involves an introductory survey of topics in intellectual property, including copyright, trademark, patent, and unfair competition issues. If time permits, the course may also cover certain aspects of e-commerce.

**LAWW6343 Conflict Resolution (Irregular)** Explores methods utilized in the legal profession for resolving disputes. Students develop skills by participating in simulation exercises designed to identify and apply processes. Class readings/discussion on theory and practice will be followed by student simulations. Designed for second and third year law students.

**LAWW6366 Legal Clinic: Immigration (Irregular)** Immigration Clinic will provide opportunities for students preparing for a career in immigration law or general practice by developing skills that are critical in legal practice through an experiential learning model. Working under the supervision of a clinical faculty member, students will represent sectors of the immigrant population for graded credit. Criminal Procedure and Professional Responsibility are prerequisites, as well as the completion of at least forty-eight credit hours prior to enrollment. Prerequisite: LAWW 4143, 5013.

**LAWW6373 Legal Clinic (Federal Practice) (Sp, Su, Fa)** Students receive clinical legal experiences in federal courts and before federal administrative agencies. Although the particular experiences vary, Chapter 7 (no asset) bankruptcies and farm foreclosures are often emphasized.

**LAWW6383 General Practice Clinic (Su)** (First Offered Summer 2002) Students will integrate, extend, and refine their legal knowledge and lawyering skills through representation of clients in civil cases pending before Arkansas Circuit and Chancery Courts, federal bankruptcy or administrative cases pending before the U.S. Bankruptcy Court and Administrative Law Judges, and prosecution of criminal misdemeanor cases. Students are responsible for all aspects of representation including interviewing, counseling, negotiation, pleading and discovery practice, and trial advocacy. This course offers students a practice experience similar to that experienced by many lawyers practicing in small to medium sized firms in Arkansas and other states in the region. Prerequisite: Unless waived by the instructor, a cumulative GPA of 2.00; successful completion of 48 semester hours of offerings, including LAWW 4103, LAWW 4203, LAWW 4173, LAWW 6093, and LAWW 5013; and qualifying for Rule XV practice.

**LAWW6393 Legal Clinic (Transactional) (Irregular)** Students receive clinical legal experience counseling and representing

non-profit organizations serving Northwest Arkansas in a wide range of non-litigation business law matters. Services include startup, incorporation, obtaining federal and state tax exemptions, change of business form, purchase and lease of real and personal property, employment and labor law issues, and general contract negotiation, drafting and execution. In addition, students prepare and participate as presenters in a workshop on matters of general interest to non-profit organizations. Legal Clinic Faculty supervise and review the student attorney's work, and provide personal feedback to the individual student attorneys. Prerequisite: Qualification for Rule XV practice.

**LAWW6403 Land Use (Sp, Su, Fa)** Covers public land use controls such as zoning, subdivision regulations, and eminent domain (including private property rights, takings, and inverse condemnation). Heavy emphasis is placed on planning at state and local levels.

**LAWW6433 Legal Clinic: Innocence Project (Irregular)** This clinic works in conjunction with the Innocence Project, Arkansas to provide pro bono representation to individuals committed to the Arkansas Department of Corrections where available evidence establishes proof of the client's actual innocence. Students are responsible for all aspects of the representation including: case review, investigation, development of lay and expert testimony, pleading, briefing, discovery, and assistance in court proceedings. The Innocence Project, Arkansas is an Arkansas non-profit corporation. Students must be Rule XV eligible and have taken Trial Advocacy. The Innocence Project Clinic is a 3 credit course.

**LAWW6443 Legal History (Sp, Su, Fa)** Investigation of English and American legal institutions and doctrines. Emphasis on early American (colonial) and 19th Century developments in the law.

**LAWW6453 American Legal History (Irregular)** An examination of major themes in American legal history, with an emphasis on the origins and meaning of the United States Constitution. Various topics will be explored in the light of the original understandings, developments over time, and current interpretations by the courts and the body politic.

**LAWW6473 Legal Clinic (Criminal Prosecution) (Sp)** Students in this course will have the opportunity to extend and refine their lawyering skills, knowledge of substantive law, and mastery of criminal procedure through prosecution of misdemeanor crimes on behalf of the State in Municipal Court. Students are fully responsible for the cases assigned to them. Their responsibilities include assessing the charges and investigation of law enforcement, interviewing witnesses, conducting discovery, evaluating cases for an agreed upon resolution, negotiating with defense counsel and pro se defendants, responding to suppression and other defense motions, trial preparation, and trying cases to the court. The preparation and performance of student attorneys is supervised by clinic faculty who provide personal feedback to the individual students. Prerequisite: Unless waived by the instructor, prerequisites for taking the course shall be a cumulative grade point average of 2.00; the successful completion of 48 semester hours of offerings, including Civil Procedure I, Civil Procedure II, Criminal Law, Criminal Procedure, Evidence, and Professional Responsibility; and qualifying for Rule XV practice.

**LAWW6513 Immigration Law and Policy (Sp, Su, Fa)** Study of immigration and nationality, including exclusion and deportation; political asylum and refugee status; visa allocation and distribution; labor certification; and naturalization and citizenship. It is recommended that Administrative Law be taken first.

**LAWW6523 Employment Law (Sp, Su, Fa)** An overview of the law governing various aspects of the employment relationship, both statutory and common law. Covers the establishment and parameters of employment, the security of the worker, employer's rights, and terminations.

**LAWW6613 Bankruptcy (Sp, Su, Fa)** Study of insolvency law, with particular emphasis on federal bankruptcy law.

**LAWW6623 Sentencing and Post-Conviction Remedies (Sp, Su, Fa)** Law, theory, and practice of sentencing and post-conviction remedies.

**LAWW6633 Advanced Criminal Procedure (Sp)** This course focuses on prosecuting crime. Principal topics include: the prosecutor's decision to charge, the role of defense counsel, initial appearance, bail and pretrial release, grand jury and preliminary hearings, discovery, guilty pleas and plea bargaining, speedy trial, double jeopardy, trials and pretrial motions, sentencing and post-conviction remedies. Prerequisite: LAWW 4173.

**LAWW6713 Judicial Externship (Sp, Su, Fa)** Judicial Externship is an elective externship for second and third year students. Externs shall report to and be under direct supervision of a judge of the federal district court, the bankruptcy court, or a circuit court approved by the externship coordinator. Externs' duties may be determined by the supervising judge and may include work on assigned cases, research, preparation of memoranda, and consultation with full-time law clerks.

**LAWW6722 Terrorism, National Security and Human Rights (Irregular)** International law issues relating to protection

of human rights. Research papers will satisfy upper-level writing requirement.

**LAWW6723 Juvenile Justice Externship (Irregular)** Juvenile Justice Externship is an elective externship for third year law students. Prerequisites for participating are: successful completion of the Criminal Defense Clinic or the General Practice Clinic; certification under Rule XV of the Arkansas Rules Governing Admission to the Bar; and the advance approval of the faculty member assigned to supervise the externship.

**LAWW6812 Legislative Externship (Irregular)** Elective externship for third year students. Available only to a student who has successfully completed 48 hours of law credit and has earned a grade of C or higher in Professional Responsibility. Students must disclose whether they have been subject of any prior honor code proceeding which resulted in imposition of any penalty. Extern shall report to and be supervised by either a chief of staff or deputy chief of staff. Duties shall be determined by the field supervisor. Duties may include observation of and assistance in day-to-day operations, special projects, work with federal or state agencies, communications with constituents and other duties as assigned. Prerequisite: 48 hours law credit and grade of C or higher in Professional Responsibility.

**LAWW6814 Corporate Counsel Externship (Irregular)** Externs work with a supervising attorney in a corporate counsel's office. In Fall and Spring semesters each extern works 16 hours per week (average minimum), and in Summer the extern shall work at least 20 hours per week during the 12-week term; keeps a journal, and meets at least 3 times with the faculty supervisor. Prerequisites: LAWV 4294, LAWV 5013 and approval of the faculty supervisor; recommended: LAWV 6293

**LAWW6822 Patent Law (Sp, Su, Fa)** Study of the patent system of the United States, including conditions for a valid patent, procedures of the patent office, and litigation relating to patents. Not offered every year.

**LAWW6903 ADR in the Workplace (Irregular)** Explores the practical as well as the legal problems presented by the use of alternative dispute resolution to resolve employment disputes. The primary focus will be on the enforcement of collective bargaining agreements and individual employment contracts through arbitration, and the use of arbitration to resolve statutory issues such as claims of employment discrimination. There also will be some consideration of other forms of ADR such as mediation, fact-finding, and peer-review systems. Course satisfies the skills requirement.

**LAWW6913 Environmental Law (Sp, Su, Fa)** Devoted primarily to the legal problems related to the environment. Included is consideration of environmental impact in public and private decision making.

**LAWW6923 Legal Clinic (Civil Practice) (Sp, Su, Fa)** Students develop skills by working with actual clients in nearby civil courts. Students interview clients, counsel them, negotiate and litigate. The Legal Clinic faculty supervise and review the students' work, and provide personal feedback to individual students. Prerequisite: Cum GPA of 2.00, successful completion of 48 semester hours, including Civil Procedure I and II, Criminal Procedure, Evidence, and Professional Responsibility, and qualifying for Rule XV practice.

**LAWW6943 Public International Law (Sp, Su, Fa)** Principles of international law involving relations among government. The function of international tribunals and organizations.

**LAWW6963 Legal Clinic (Criminal Defense) (Sp, Su, Fa)** Students develop skills by representing actual clients charged with misdemeanors in Washington County and nearby counties and clients charged with felonies and misdemeanors in Washington County Juvenile Court. Students interview clients, counsel them, negotiate, and litigate. The Legal Clinic faculty supervise and review the students' work, and provide personal feedback to individual students.

**LAWW7012 Juvenile Justice Seminar (Sp, Su, Fa)** Examines procedural and substantive law in the context of the distinctive goals, structure, and procedure of the Juvenile Court. Special attention is given to alternative ways of dealing with two categories of juveniles, i.e., status offenders who are within the jurisdiction of the court although not accused of criminal conduct, and youthful offenders who commit serious crimes.

**LAWW7032 Criminal Justice Seminar (Sp, Su, Fa)** A study of the theories and practices relating to criminal legislation and incarceration.

**LAWW7053 Prosecution Externship (Irregular)** Students work in the Washington County Prosecutors office for approximately ten (10) hours each week handling three (3) to four (4) felony cases as well as conducting arraignments, citizen intakes, probable cause hearings, and evaluating warrant requests. Students also attend a weekly seminar in which they discuss various aspects of the criminal justice system. The seminar component provides time for the students to reflect and self-evaluate their work. Prerequisite: LAWV 6473 and Rule XV qualification.

**LAWW706V Sports Law (Irregular) (2-3)** The major topics covered include significant contract issues, tort liability involving

participants, institutions, physicians and equipment manufacturers, criminal liability, drug testing, constitutional and related issues dealing with sports associations and Title 9 and gender equity issues. Other relevant topics may also be covered if possible.

**LAWW7072 Advanced Mediation Clinic (Irregular)** Students will co-mediate civil cases referred by Courts and agencies. Students will work with experienced mediators and the mediation clinic supervisor, who will review their performances on an individual basis. Students may produce educational programs for various groups. Class discussions will focus on current mediation issues and problems. Pre-requisite: Mediation in Practice.

**LAWW7073 Mediation in Practice (Irregular)** This three-credit course will train students to mediate disputes assigned to the Northwest Arkansas Dependency-Neglect/Families In Need of Services Mediation Project by the juvenile court. In the first five weeks of the semester, students will be introduced to basic mediation theory, procedures, and ethical constraints; communication techniques; juvenile law; and operation of the child welfare system in Arkansas. This training will include lectures, discussion, and simulation exercises. In the remaining weeks of the semester, students will receive additional information and simulation practice, and they will also observe and participate in the mediation of actual cases assigned to the Project.

**LAWW7243 Health Law (Sp, Su, Fa)** An examination of the role of the law in determining access to and regulation of the quality of services provided by the health care industry.

**LAWW7342 Law and the Internet (Irregular)** This is a survey course. Students will study laws associated with doing business over the internet. A partial list of topics to be covered is: jurisdiction, trademarks, copyrights, patents, contracting, taxation, privacy, obscenity, defamation, and criminal law. The course is highly interactive. In addition to lectures, students will participate in case discussions and presentations.

**LAWW760V Bankruptcy - Business Reorganizations (Irregular) (2-3)** Examines the rules and tactics governing the reorganization of a struggling business or farm under Chapter 11 of the Bankruptcy Code. Students will reorganize a hypothetical failing business as a part of the course.

**LAWW7612 Advanced Consumer Bankruptcy (Sp, Su, Fa)** Study of recent developments in the law of bankruptcy as it applies to consumers and nonconsumers transactions. Prerequisite: LAWV 6602.

**LAWW7662 American Indian Law (Sp, Su, Fa)** Study of the domestic federal law of the United States as it applies to Native Americans and their tribes. The general concept of tribal self-determination is the unifying theme of the course. Particular topics include tribal sovereignty and government; American Indian civil rights; administration of justice on and off the reservation; American Indian land claims; land, hunting, and fishing rights; water rights; American Indian health, education, and welfare; Bureau of Indian Affairs; state taxation; individual and tribal treaty rights; federal Indian policy; and zoning and environmental controls.

**LAWW770V Master's Thesis in Agricultural Law (Sp, Su, Fa) (1-4)** Research in a specialized area of agricultural law and development of a scholarly paper containing the results of this research.

**LAWW771V Independent Research in Agricultural Law (Sp, Su, Fa) (1-2)** Independent research in agricultural law conducted under the supervision of a faculty member.

**LAWW7753 Agriculture and the Environment (Sp, Su, Fa)** Study of the application of environmental law to agricultural operations. Topics include soil erosion, takings, pesticide law, the Clean Water Act, the Clear Air Act, common law nuisance, drainage, wildlife, and endangered species.

**LAWW7763 Agricultural Finance and Credit (Sp, Su, Fa)** Study of the legal issues surrounding the financing of agricultural operations, including credit availability, agricultural security issues under the Uniform Commercial Code, and debt restructuring opportunities. Special focus is on lending options offered by the Farm Service Agency and the Farm Credit System.

**LAWW7773 Water Law (Sp, Su, Fa)** Study of real property principles governing ownership rights in water and the federal and state statutes controlling the use of water.

**LAWW7782 Agricultural Labor Law (Sp, Su, Fa)** Study of the federal laws that govern the employment of agricultural workers, including wage and hour provisions, laws impacting migrant and seasonal farm workers, immigration issues, occupational safety and health, and child labor laws.

**LAWW7783 Agricultural Administrative Procedure and Practice (Sp, Su, Fa)** Focus on administrative practice before the USDA and the judicial review of USDA actions involving the federal domestic commodity programs, federal crop insurance, the Packers and Stockyards Act, the Perishable Agricultural Commodities Act, and federal marketing Orders.

**LAWW7802 Comparative Law Seminar (Sp, Su, Fa)** A study of selected foreign legal systems with a focus on the basic differences between those legal institutions and the Anglo-American

common law system.

**LAWW7822 Corporate Practice Ethics (Irregular)** The study, preparation, and/or review of materials, documents, and matters frequently encountered in the organization, operation, and sale or other disposition of both public and closed corporations.

**LAWW7862 Food Law (Irregular)** An examination of the network of laws that govern food safety and food labeling and a discussion of the efficacy of this network - is it working properly and are consumers well served by it? The course materials will be based on statutory and regulatory law, judicial decisions, and a series of policy readings. Current issues in the news, e.g., mad cow disease, the spinach e-coli outbreak, and the organic standards will be considered in our discussion.

**LAWW7912 Government Regulation of Agriculture (Sp, Su, Fa)**

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## Mathematics (MATH)

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**MATH0003 Beginning and Intermediate Algebra (Sp, Su, Fa)** For students who have inadequate preparation for taking MATH 1203. Credit earned in this course may not be applied to the total required for a degree. Corequisite: Lab component.

**MATH1203 College Algebra (Fa, Sp, Su,)** Topics include the solution and application of linear and quadratic equations and inequalities; functions, graphs, and theory of equations; matrix solutions of systems of equations and basic properties of matrices. Credit will be allowed for only one of MATH 1203 and MATH 1285. Prerequisite: MATH 0003 with a grade of C or better or a score of 22 on the Math component of the ACT exam. (Same as MATH 1203C, MATH 1204)

**MATH1203C College Algebra (Sp, Su, Fa)** Same as MATH 1203 except taught with a co-requisite drill component. Credit will be allowed for only one of MATH 1203 and MATH 1285. Prerequisite: MATH 0003 with a grade of C or better or a score of 22 on the Math component of the ACT exam. Corequisite: Drill component. (Same as MATH 1203, MATH 1204)

**MATH1204 College Algebra with Review (Sp, Su, Fa)** Same as MATH 1203 with additional support, increased class time, additional review, and computerized lab component. Only one of MATH 1203, MATH 1204, AND MATH 1285 may be counted for degree credit. Prerequisite: MATH 0003 with C or better or a score of 19 on Math ACT. (Same as MATH 1203, MATH 1203C)

**MATH1213 Plane Trigonometry (Sp, Su, Fa)** Basic topics in trigonometry including identities, formulas, and polar coordinate system. Credit will be allowed for only one of either MATH 1213 or MATH 1285. Corequisite: MATH 1213L. Prerequisite: MATH 1203 with a grade of C or better or a score of 23 on the Math component of the ACT exam.

**MATH1285 Precalculus Mathematics (Sp, Fa)** Topics in algebra and trigonometry. To be taken by students who have successfully completed Algebra II and a trigonometry course in high school and expect to take MATH 2554. Credit will be allowed for only one of MATH 1203 and MATH 1285. Prerequisite: A score of 23 on the Math component of the ACT exam.

**MATH2033 Mathematics in Society (Sp, Su, Fa)** This course introduces students to a variety of topics in contemporary mathematics, drawn mainly from applications to the social sciences. Topics include graph theory, statistics and voting systems. Prerequisite: MATH 1203 or MATH 1204 with a C or better or a score of 24 on Math ACT.

**MATH2043 Survey of Calculus (Sp, Su, Fa)** Selected topics in elementary calculus and analytic geometry for students in business, agriculture, and social sciences. Credit will be allowed for only one of MATH 2043 and MATH 2554. Prerequisite: MATH 1203 with a grade of C or better or a score of 23 on the Math component of the ACT exam. (Same as MATH 2043C)

**MATH2043C Survey of Calculus (Sp, Su, Fa)** Selected topics in elementary calculus and analytic geometry for students in business, agriculture, and social sciences. Credit will be allowed for only one of MATH 2043 and MATH 2554. Co-requisite: Drill component. Prerequisite: MATH 1203 with a grade of C or better or a score of 23 on the Math component of the ACT exam. (Same as MATH 2043)

**MATH2053 Finite Mathematics (Sp, Su, Fa)** Selected topics in probability and statistics, review of algebraic matrices, and graphic analysis of linear programming for students in business, agriculture, and social sciences. Prerequisite: MATH 1203 with a grade of C or better or a score of 23 on the Math component of the ACT exam. (Same as MATH 2053C)

**MATH2053C Finite Mathematics (Sp, Fa)** Selected topics in probability and statistics, review of algebraic matrices, and graphic analysis of linear programming for students in business, agriculture, and social sciences. Taught with a two-day-per-week lecture and one-day-per-week drill. Prerequisite: MATH 1203 with a grade of C or better or a score of 23 on the Math component of the ACT exam. (Same as MATH 2053)

**MATH2103 Discrete Mathematics (Sp, Su, Fa)** Introductory

study of sets, relations, logic, proofs, algorithms, counting methods, graph theory, trees, and Boolean algebras. Prerequisite: MATH 1203 with a grade of C or better or ACT math score of 21 or above. (Same as MATH 2103C)

**MATH2103H Honors Discrete Mathematics (Fa)** Introductory study of sets, relations, logic, proofs, algorithms, counting methods, graph theory, trees, and Boolean algebras. Prerequisite: MATH 1203 with a grade of C or better or ACT math score of 21 or above.

**MATH2103C Discrete Mathematics (Sp, Su, Fa)** Introductory study of sets, relations, logic, proofs, algorithms, counting methods, graph theory, trees, and Boolean algebras. Corequisite: Lab component. Prerequisite: MATH 1203 with a grade of C or better or ACT math score of 21 or above. (Same as MATH 2103)

**MATH2183 Mathematical Reasoning in a Quantitative World (Sp, Fa)** Mathematical and statistical reasoning are required in contexts of growing complexity and sophistication. The purpose of this course is to cause students to possess the power and habit of mind to search out quantitative information, critique it, reflect upon it, and apply it in their public, personal and professional lives. Prerequisite: MATH 1203 with a grade of C or better or a score of 23 on the Math component of the ACT exam.

**MATH2213 Survey of Mathematical Structures I (Sp, Su, Fa)** Sets and logic, systems of numerations, number systems and operations, and elementary number theory. Prerequisite: MATH 1203 with a grade of C or better.

**MATH2223 Survey of Mathematical Structures II (Sp, Su, Fa)** Geometry and measurement, and statistics and probability. Prerequisite: MATH 1203 with a grade of C or better.

**MATH2554 Calculus I (Sp, Su, Fa)** Derivative of functions of one variable, applications of the derivative, introduction of the integral, and applications. Credit will be allowed for only one of MATH 2554 and MATH 2043. Prerequisite: MATH 1285 or MATH 1213 with a grade of C or better, or a score of 27 on the Math component of the ACT exam. (Same as MATH 2554C)

**MATH2554H Honors Calculus I (Sp, Su)** Topics in analytic geometry and calculus. Students may not receive credit for both MATH 2043 and MATH 2554. Prerequisite: A score of 30 or higher on the Math component of the ACT exam. (Same as MATH 2554C)

**MATH2554C Calculus I (Sp, Su, Fa)** Derivative of functions of one variable, applications of the derivative, introduction of the integral, and applications. Credit will be allowed for only one of MATH 2554 and MATH 2043. Corequisite: Drill component. Prerequisite: MATH 1285 or MATH 1213 with a grade of C or better, or a score of 27 on the Math component of the ACT exam. (Same as MATH 2554)

**MATH2564 Calculus II (Sp, Su, Fa)** Integral calculus of one variable and infinite series. Prerequisite: MATH 2554 with a grade of C or better. (Same as MATH 2564C)

**MATH2564H Honors Calculus II (Sp)** Integral calculus of one variable and infinite series. Prerequisite: MATH 2554 with a grade of C or better. (Same as MATH 2564C)

**MATH2564C Calculus II (Sp, Su, Fa)** Integral calculus of one variable and infinite series. Three hours of lecture and two hours of drill (recitation) per week. Corequisite: Drill component. Prerequisite: MATH 2554 with a grade of C or better. (Same as MATH 2564)

**MATH2574 Calculus III (Sp, Su, Fa)** Differential and integral calculus of several variables, and vector calculus. Prerequisite: MATH 2564 with a grade of C or better. (Same as MATH 2574C)

**MATH2574H Honors Calculus III (Sp, Su, Fa)** Differential and integral calculus of several variables, and vector calculus. Prerequisite: MATH 2564 with a grade of C or better. (Same as MATH 2574C)

**MATH2574C Calculus III (Sp, Su, Fa)** Differential and integral calculus of several variables, and vector calculus. Three hours of lecture and two hours of drill (recitation) per week. Corequisite: Drill component. Prerequisite: MATH 2564 with a grade of C or better. (Same as MATH 2574)

**MATH2701 Survey of Higher Math (Sp)** This course overviews the landscape of higher mathematics, touching on many of the themes of modern mathematics: proof, logic, cardinality, analysis, modeling, abstract algebra, number theory, topology and geometry. Prerequisite: MATH 2564.

**MATH3083 Linear Algebra (Sp, Su, Fa)** Systems of linear equations, vector spaces, linear transformations, matrices, and determinants. Prerequisite: MATH 2554 or MATH 2043, with a grade of C or better.

**MATH3093 Abstract Linear Algebra (Sp, Fa)** A proof-based course on vector spaces, linear transformations, matrices, determinants, eigenspaces and eigenvalues, with applications. Recommended for mathematics majors. Prerequisite: MATH 2564 with a C or better.

**MATH3103 Combinatorial and Discrete Mathematics (Sp)** Basic combinatorial techniques including the study of networks, generating functions, principles of inclusion/ exclusion, Zn, Hamming coding theory, graph theory, and block designs. Prerequisite: MATH 2103.

**MATH3113 Introduction to Abstract Algebra I (Sp, Fa)** Introduction to algebraic structures with emphasis on rigorous

justification of results. Prerequisite: MATH 3083.

**MATH3133 History of Mathematics (Irregular)** Prerequisite: MATH 2554 and junior standing.

**MATH3203 Theory of Numbers (Irregular)** Prerequisite: MATH 2554 and junior standing.

**MATH3404 Differential Equations and Laplace Transform (Sp, Su, Fa)** First and second order ordinary differential equations, the Laplace transform, and matrix systems of ordinary differential equations. Prerequisite: MATH 2564 with a grade of C or better. (Same as MATH 3404C)

**MATH3404C Differential Equations and Laplace Transform (Sp, Su, Fa)** First and second order ordinary differential equations, the Laplace transform, and matrix systems of ordinary differential equations. Three hours of lecture and two hours of drill (recitation) per week. Corequisite: Drill component. Prerequisite: MATH 2564 with a grade of C or better. (Same as MATH 3404)

**MATH3423 Advanced Applied Mathematics (Sp, Su, Fa)** Matrices, Fourier analysis, and partial differential equations. Prerequisite: MATH 3404.

**MATH3773 Foundations of Geometry I (Fa)** Axiomatic method; Euclidean geometry; non-Euclidean geometry.

**MATH3923H Honors Colloquium (Irregular)** Covers a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in mathematics).

**MATH399VH Honors Mathematics Course (Sp, Su, Fa) (1-6)** Prerequisite: Junior standing. May be repeated for up to 12 hours of degree credit.

**MATH400V Directed Readings (Sp, Su, Fa) (1-6)**

**MATH4103 Finite Dimensional Vector Spaces (Irregular)** Linear functionals, matrix representation of linear transformations, scalar product, and spectral representation of linear transformations. Prerequisite: MATH 3083.

**MATH4113 Introduction to Abstract Algebra II (Fa)** Topics in abstract algebra including finite abelian groups, linear groups, factorization in commutative rings, quadratic field extensions, Gaussian integers, Wedderburn's theorem, and multilinear algebra. Prerequisite: MATH 3113.

**MATH4153 Mathematical Modeling (Irregular)** Mathematical techniques for formulating, analyzing, and criticizing deterministic models taken from the biological, social, and physical sciences. Techniques include graphical methods, stability, optimization, and phase plane analysis. Prerequisite: MATH 3404.

**MATH4163 Dynamic Models in Biology (Irregular)** Mathematical and computational techniques for developing, executing, and analyzing dynamic models arising in the biological sciences. Both discrete and continuous time models are studied. Applications include population dynamics, cellular dynamics, and the spread of infectious diseases. Prerequisite: MATH 2554. (Same as BIOL 4163)

**MATH4253 Symbolic Logic I (Fa)** Rigorous analyses of the concepts of proof, consistency, equivalence, validity, implication, and truth. Full coverage of truth-functional logic and quantification theory (predicate calculus). Discussion of the nature and limits of mechanical procedures (algorithms) for proving theorems in logic and mathematics. Informal accounts of the basic facts about infinite sets. (Same as PHIL 4253)

**MATH4353 Numerical Linear Algebra (Sp)** Numerical methods for problems of linear algebra, including the solution of very large systems, eigenvalues, and eigenvectors. Prerequisite: MATH 3083.

**MATH4363 Numerical Analysis (Fa)** General iterative techniques, error analysis, root finding, interpolation, approximation, numerical integration, and numerical solution of differential equations. Prerequisite: MATH 3404.

**MATH4443 Complex Variable for Application (Sp)** Complex analysis, series, and conformal mapping. Additional applications for graduate credit. Prerequisite: MATH 3404.

**MATH4503 Differential Geometry and Vector Calculus (Irregular)** Topics include: Vector differential and integral calculus, Stokes' Theorem in 3-space, classical differential geometry in 3-space (curves, surfaces), differential forms, general Stokes' Theorem, applications to hydrodynamics, and electromagnetism. Prerequisite: MATH 2574.

**MATH4513 Advanced Calculus I (Fa)** The real and complex number systems, basic set theory and topology, sequences and series, continuity, differentiation, and Taylor's theorem. Emphasis is placed on careful mathematical reasoning. Prerequisite: MATH 2574 and MATH 3083.

**MATH4523 Advanced Calculus II (Sp)** The Riemann-Stieltjes integral, uniform convergence of functions, Fourier series, implicit function theorem, Jacobians, and derivatives of higher order. Prerequisite: MATH 4513.

**MATH4932 Mathematics Major Seminar (Sp)** The two-credit course has several components designed to address students' mathematical knowledge, problem-solving and communication skills. A series of weekly seminars on topics of historical or cross-disciplinary interest is accompanied by a weekly problem-solving seminar in

which student presentations could play a part. The course also is a forum for sharing information about career opportunities and preparation for employment.

**MATH498V Senior Thesis (Sp, Su, Fa) (1-6)**

**MATH504V Special Topics for Teachers (Irregular) (1-6)** Current topics in mathematics of interest to secondary school teachers. Prerequisite: Graduate standing.

**MATH510V Mathematical Seminar (Sp, Fa) (1-3)** Members of the faculty and advanced students meet for presentation and discussion of topics. Prerequisite: Graduate standing.

**MATH5123 Algebra I (Sp)** What the beginning graduate student should know about algebra: groups, rings, fields, modules, algebras, categories, homological algebra, and Galois Theory. Prerequisite: MATH 3113.

**MATH5133 Algebra II (Fa)** Continuation of 5123. Prerequisite: MATH 5123.

**MATH5303 Ordinary Differential Equations (Fa)** Existence, uniqueness, stability, qualitative behavior, and numerical solutions. Prerequisite: MATH 3404 and MATH 4513 and programming experience.

**MATH5313 Partial Differential Equations (Sp)** Classification, boundary value problems, applications, and numerical solutions. Prerequisite: MATH 3423 and MATH 4513.

**MATH5363 Scientific Computation and Numerical Methods (Fa)** An introduction to numerical methods used in solving various problems in engineering and the sciences. May not earn credit for this course and MATH 4353 or MATH 4363. (Same as PHYS 5363)

**MATH5453 Functional Analysis I (Odd years, Sp)** Linear vector spaces and linear operators. Prerequisite: MATH 5513.

**MATH5503 Theory of Functions of a Real Variable I (Fa)** Real number system, Lebesgue measure, Lebesgue integral, convergence theorems, differentiation of monotone functions, absolute continuity and the fundamental theorem of calculus  $L^p$  spaces, Holder and Minkowski inequalities, and bounded linear functionals on the  $L^p$  spaces. Prerequisite: MATH 4523.

**MATH5513 Theory of Functions of a Real Variable II (Sp)** Measure and integration on abstract measure spaces, signed measures, Hahn decomposition, Radon-Nikodym theorem, Lebesgue decomposition, measures on algebras and their extensions, product measures, and Fubini's theorem. Prerequisite: MATH 5503.

**MATH5523 Theory of Functions of a Complex Variable I (Fa)** Complex numbers, analytic functions, power series, complex integration, Cauchy's Theorem and integral formula, maximum principle, singularities, Laurent series, and Mibius maps. Prerequisite: MATH 4513.

**MATH5533 Theory of Functions of a Complex Variable II (Sp)** Riemann Mapping Theorem, analytic continuation, harmonic functions, and entire functions. Prerequisite: MATH 5523.

**MATH5703 Foundations of Topology (Fa)** Metric and general topological spaces, separation axioms, Urysohn's lemma, Tietze extension theorem, connectedness, compactness, and the Tychonoff theorem. Prerequisite: MATH 4513.

**MATH5713 Algebraic Topology (Fa)** Homotopy, singular and relative homology, excision theorem, the Mayer-Vietoris sequence, Betti numbers, and the Euler characteristic. Prerequisite: MATH 5703.

**MATH600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**MATH610V Directed Readings (Irregular) (1-6)**

**MATH619V Topics in Algebra (Sp, Su, Fa) (1-6)** Current research interests in algebra.

**MATH659V Topics in Analysis (Sp, Su, Fa) (1-6)** Current research interests in analysis.

**MATH679V Topics in Topology (Sp, Su, Fa) (1-6)** Current research interest in topology.

**MATH700V Doctoral Dissertation (Sp, Su, Fa) (1-18)**

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### Master of Business Admin (MBAD)

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**MBAD511V Corporate Financial Management (Sp) (2-3)** Financial analysis, planning and control; decision making and modeling for financial managers; and financial policies for management. Corequisite: MBAD 5132 and MBAD 5222. Prerequisite: MBAD 5122 and MBAD 5212 and MBAD 5232.

**MBAD512V Accounting Decisions and Control (Su) (2-3)** Preparation and utilization of financial information for internal management purposes: planning and special decisions, cost determination, performance evaluation, and controls. Corequisite: MBAD 5212 and MBAD 5232.

**MBAD513V Information Technology and Decision Making (Fa) (2-3)** Utilization of information, quantitative techniques, and computer application in decision making and problem solving for managers. Corequisite: MBAD 5112 and MBAD 5222. Prerequisite: MBAD 5122 and MBAD 5212 and MBAD 5232.

**MBAD521V Leading High Performance Organizations (Irregular) (2-3)** Managing in a global workforce, including human re-

source issues, motivation, performance evaluation, quality concepts, transformational leadership, and selection/ recruitment/ development of employees. Corequisite: MBAD 5122 and MBAD 5232.

**MBAD522V Managing Ideas, Products, and Services (Irregular) (2-3)** Product management, market research, marketing communications, retailing and distribution, consumer behavior, and social and ethical implications of marketing. Corequisite: MBAD 5112 and MBAD 5132. Prerequisite: MBAD 5122 and MBAD 5212 and MBAD 5232.

**MBAD523V Economics of Management and Strategy (Irregular) (2-3)** Information economics and applied game theory. Corequisite: MBAD 5212 and MBAD 5122.

**MBAD5241 Ethical Decision Making (Fa)** Business Ethics will address business ethics issues from a personal, professional, and organizational perspective. We will cover basic ethical decision-making frameworks to help inform students' personal moral frameworks, ethical issues that are most relevant to managers of modern organizations, and the role of business in society

**MBAD535V MBA Internship (Su) (1-3)** This course allows a student to experience an internship within a business and benefit from the applied experience. The internship may be designed to offer a wide range of business experiences. The internship must be supervised by a faculty member as well as a member of the firm. MBA Director approval required. May be repeated for up to 3 hours of degree credit.

**MBAD536V Study Abroad-Special Problems (Su) (1-3)** Provides MBA students with the opportunity to explore a business problem in depth under the guidance of a graduate faculty member. MBA Director approval required.

**MBAD5413 Partnering Project (Irregular)** A large-scale, real world, 10 week project involving hands-on work addressing issues faced by managers in partnering firms. Corequisite: MBAD 5313 and MBAD 5423.

**MBAD5423 Partnering Project II (Sp)** Continuation of MBAD 5413. Corequisite: MBAD 5313 and MBAD 5413.

**MBAD5433 Capstone Project (Su)** A large-scale project integrating various business topics. Corequisite: MBAD 5313.

**MBAD5511 Professional Development -- Special Topics In Business (Sp, Fa)** A concentrated emphasis on one business topic. Corequisite: MBAD 5212, MBAD 5122 and MBAD 5232. Prerequisite: MBAD 5023. May be repeated for up to 5 hours of degree credit.

**MBAD5602 Introduction to the Value Chain (Fa)** An introduction to the value chain concept, the underlying framework of the Managerial MBA program. Topics include the primary value chain activities of inbound logistics, operations, outbound logistics, marketing and sales, and service, as well as the support activities of procurement, technology development, human resource management and firm infrastructure.

**MBAD5613 Financial Accounting (Fa)** This course covers the preparation and use of financial statements of publicly held corporations in the United States. Topics include the theory and rules used in financial statement preparation, a comparison of United States rules to International Accounting Standards, the analysis of financial statements to provide inter-company and industry comparisons and information about the financial statements of non-profit and governmental organizations.

**MBAD5773 China Business Law, Regulations, and Ethics (Irregular)** Business law in China that is relevant to managers; Chinese regulations particularly relevant to consumer products and retail; business ethics in China.

**MBAD591V Capstone Project Definition (Irregular) (1-3)** Identification of business processes for capstone project, including: estimation of the size of the opportunity, identification of key decisions, and proposal write up.

**MBAD592V Capstone Project Plan (Irregular) (1-3)** Second estimation of the size of the project benefit, identification of how the current process operates, assumptions identified, literature investigated, performance metrics, and Gantt chart for project.

**MBAD593V Capstone Project Management (Irregular) (1-3)** Management of the project, including frequent updates, milestone accomplishment, strategies to overcome challenges, and creation of an implementation plan.

**MBAD594V Capstone Project Final Deliverables (Irregular) (1-3)** Write up of entire capstone project, presentation of project, estimates of value, implementation plan, performance metrics, and change management plan.

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### Mechanical Engineering (MEEG)

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**MEEG2003 Statics (Sp, Su, Fa)** Equilibrium and resultants of force systems in a plane and in space; analysis of structures, friction, centroids, moments of inertia, and virtual work method. Methods of analysis are emphasized. Corequisite: Drill component. Pre- or Corequisite: MATH 2574. Prerequisite: PHYS 2054.

**MEEG2013 Dynamics (Sp, Su, Fa)** Kinematics and kinetics of

particle and of rigid bodies; work and energy; impulse and momentum, and special topics. Corequisite: Drill component. Prerequisite: MEEG 2003.

**MEEG2023 Introductory Mechanics (Fa)** This is a combined course covering basic parts of MEEG 2003 Statics and MEEG 2013 Dynamics. The topics include fundamentals in mechanics, forces, moments, equilibrium of particles and rigid bodies, kinematics and kinetics of particles. Mechanical Engineering students will not be given degree credit for this class. Prerequisite: PHYS 2054 and MATH 2574.

**MEEG2100 Computer-aided Design Competency (Sp, Fa)** Students entering the Mechanical Engineering Department are expected to possess basic competency in computer-aided design. Students need to pass a competency test. Deficiencies may be remedied through self-paced, computer-based instruction. Prerequisite: GNEG 1121 or GNEG 1121H.

**MEEG2103 Introduction to Machine Analysis (Sp, Su)** Introduction to kinematics and kinetics of mechanisms, static and dynamic forces, gears and cam design and analysis. Recitation three hours per week and drill one hour per week. Prerequisite: PHYS 2074, MEEG 2003, and MEEG 2100.

**MEEG2303 Introduction to Materials (Sp, Fa)** A study of chemical, physical, and electrical properties of materials using fundamental atomistic approach. The materials of interest are: metals, polymers, ceramics, and composites. The interactive relationship between structure, properties, and processing of materials will be emphasized. For various engineering applications. Corequisite: Drill component. Prerequisite: MATH 2554, PHYS 2054 and CHEM 1103.

**MEEG2403 Thermodynamics (Sp, Su, Fa)** A study of the 1st and 2nd laws of thermodynamics. Availability of energy, properties of liquids, gases, and vapors; nonflow and flow processes. Recitation 3 hours, drill 2 hours per week. Corequisite: Drill component. Prerequisite: PHYS 2054 and MATH 2564.

**MEEG2703 Computer Methods in Mechanical Engineering (Sp, Su)** Use of computers and programming for solving engineering problems. Basic numerical methods including errors, equation solution, matrices, optimization, regression, integration, and differential equations. Pre- or Corequisite: MATH 3404. Corequisite: Drill component.

**MEEG3013 Mechanics of Materials (Sp, Su, Fa)** Stress and deformation of members in tension, compression, torsion, and bending, and the design of these members. Columns, statically indeterminate beams, and simple connections. Drill component. Prerequisite: MEEG 2003.

**MEEG3113 Machine Dynamics and Control (Su, Fa)** The principles of kinematics and kinetics for rigid body motion from dynamics are reviewed and applied to machine components with the goal being to determine their impact on machine behavior and performance. The time varying forces created by the movement of machine components are used to describe the machine's vibrational motion and elementary control principles are introduced with the goal of describing how these motions might be reduced or eliminated. Corequisite: Drill component. Prerequisite: MEEG 2013, MEEG 2103 and MATH 3404.

**MEEG3202L Mechanical Engineering Laboratory I (Sp, Fa)** Introduction to measurement, uncertainty, data acquisition, and instrumentation with an emphasis in materials and manufacturing. Corequisite: Corequisite: Drill components. Pre or Corequisite: MEEG 3013. Prerequisite: MEEG 2303 and PHYS 2074

**MEEG3212L Mechanical Engineering Laboratory II (Sp, Fa)** Design and implementation of measurements, fabrication processes, data acquisition, and data analysis with emphasis in mechanical-design elements and mechanical systems. Corequisite: Drill component. Prerequisite: ELEG 3903, MEEG 3202L, MEEG 3503 and MEEG 3113.

**MEEG3503 Mechanics of Fluids (Fa, Su)** A study of fluids including properties, pressure forces, and field flow utilizing conservation of mass, conservation of energy, and momentum principles. Pre- or Corequisite: MATH 3404. Prerequisite: MEEG 2403.

**MEEG4003 Intermediate Dynamics (Irregular)** Review of central-force motion of spacecraft, use of rotating reference frames, Coriolis acceleration. Kinematics of rigid bodies in 3-D space: velocities and accelerations in different moving reference frames, addition theorem of angular accelerations. Kinetics of rigid bodies in 3-D space: eigenvalues and eigenvectors of inertia matrices, momentum and kinetic energy of a rigid body in 3-D motion, Euler's equations of motion; precession, nutation, and spin of a gyroscope; forced steady precession, torque free steady precession, space cone, and body cone. Prerequisite: MEEG 2013

**MEEG4023 Composite Materials: Analysis and Design (Irregular)** A study of fibrous composite materials with emphasis on mechanical behavior, synthesis, and application. Topics include macro- and micromechanical analysis lamina, lamina theory, failure analysis in design, and manufacturing techniques. Prerequisite: MEEG 3013.

**MEEG4104 Machine Element Design (Sp, Su)** Select design

components commonly used in modern machines, principally for energy transmission. Students will be required to design a small system and present their design to the class. Prerequisite: MEEG 3013.

**MEEG4104H Honors Machine Element Design (Sp, Su)** Select design components commonly used in modern machines, principally for energy transmission. Students will be required to design a small system and present their design to the class. Advanced project required of honors students. Advanced project required. Prerequisite: MEEG 3013.

**MEEG4123 Finite Element Methods I (Irregular)** Introduction to the use of the finite element method in mechanical engineering analysis and design. Use of commercial software to solve thermal and mechanical problems. Pre- or Corequisite: MEEG 3013 and MEEG 4413.

**MEEG4131 Creative Project Design I (Sp, Fa)** Students will select a capstone design project, and each student group will prepare a formal written proposal on their project for presentation to a panel of judges. This group project will be carried to completion in MEEG 4133. Corequisite: MEEG 4132. Pre or Corequisite: ENGL 2003 and (MEEG 4103 or MEEG 4483). Prerequisite: Senior Standing.

**MEEG4132 Professional Engineering Practices (Sp, Fa)** Design proposal preparation, design codes, professional ethics, engineering economics, and the role of the engineer in society. Corequisite: MEEG 4131. Pre or Corequisite: ENGL 2003 and (MEEG 4103 or MEEG 4483). Prerequisite: Senior Standing.

**MEEG4133 Creative Project Design II (Sp, Fa)** Student groups will present their final capstone design proposal to a faculty panel and then carry out their project to completion. Each student group will make timely progress reports, complete their design project, and present their final report to a panel of judges. Prerequisite: MEEG 4131.

**MEEG4202L Mechanical Engineering Laboratory III (Sp, Fa)** Application of measurement techniques to mechanical engineering problems with an emphasis in thermal systems. Corequisite: Drill component. Pre- or corequisite: MEEG 4483. Prerequisite: MEEG 3212L and MEEG 4103.

**MEEG4213 Control of Mechanical Systems (Irregular)** Mathematical modeling for feedback control of dynamic mechanical systems with design techniques using Laplace transforms, state variables, root locus, frequency analysis, and criteria for performance and stability. Prerequisite: MEEG 3113. (Same as ELEG 4403)

**MEEG4233 Microprocessors in Mechanical Engineering I: Electromechanical Systems (Irregular)** Microcomputer architectural, programming, and interfacing. Smart product design (microprocessor-based design). Control of DC and stepper motors and interfacing to sensors. Applications to robotics and real-time control. Mobile robot project. Digital and analog electronics are reviewed where required. Prerequisite: ELEG 3913.

**MEEG4303 Materials Laboratory (Irregular)** A study of properties, uses, testing, and heat treatment of basic engineering materials and related analytical techniques. Corequisite: Lab component. Prerequisite: MEEG 2303.

**MEEG4303H Honors Materials Laboratory (Irregular)** A study of properties, uses, testing, and heat treatment of basic engineering materials. Corequisite: Lab component. Prerequisite: MEEG 2303 and MEEG 3013.

**MEEG4413 Heat Transfer (Sp, Su)** Basic thermal energy transport processes; conduction, convection, and radiation; and the mathematical analysis of systems involving these processes in both steady and time-dependent cases. Prerequisite: MEEG 3503 and MEEG 2703.

**MEEG4423 Power Generation (Irregular)** Study of design and operational aspects of steam, gas, and combined cycle power plants. Brief study of Nuclear and Alternative energy systems. Prerequisite: MEEG 3503.

**MEEG4433 Aerospace Propulsion (Irregular)** Principles, operation, and characteristics of gas turbine and rocket engines. Brief study of novel spacecraft propulsion systems. Prerequisite: MEEG 3503.

**MEEG4453 Industrial Waste and Energy Management (Irregular)** Applications of thermodynamics, heat transfer, fluid mechanics, and electric machinery to the analysis of waste streams and energy consumption for industrial facilities. Current techniques and technologies for waste minimization and energy conservation including energy-consuming systems and processes, utility rate analysis, economic analysis and auditing are taught. Prerequisite: MEEG 4413.

**MEEG4473 Indoor Environmental Control (Irregular)** Gives student a thorough understanding of the fundamental theory of air conditioning design for commercial buildings, including calculating heating and cooling loads along with the proper selection and sizing of air conditioning equipment. Prerequisite: MEEG 4413.

**MEEG4483 Thermal Systems Analysis and Design (Su, Fa)** Analysis design and optimization of thermal systems and components with examples from such areas as power generation, refrigeration, and propulsion, Availability loss characteristics of

energy systems and availability conservation methods. Prerequisite: MEEG 4413.

**MEEG4483H Honors Thermal Systems Analysis and Design (Su, Fa)** Analysis design and optimization of thermal systems and components with examples from such areas as power generation, refrigeration, and propulsion. Availability loss characteristics of energy systems and availability conservation methods. Additional topics, with an additional design project and/or more rigorous approach to design projects for honors course. Advanced project required. Prerequisite: MEEG 4413.

**MEEG4493 Internal Combustion Engines (Irregular)** Study of the design of internal combustion engines, including emissions and performance issues. Pre- or Corequisite: MEEG 3503.

**MEEG4503 Introduction to Flight (Fa)** The course will provide understanding in basic aerodynamics, airfoil design and characteristics, and flight control surfaces. Prerequisite: MATH 3404, MEEG 3503.

**MEEG4503H Honors Introduction to Flight (Fa)** The course will provide understanding in basic aerodynamics, airfoil design and characteristics, and flight control surfaces. Prerequisite: MATH 3404 and MEEG 3503.

**MEEG4523 Astronautics (Irregular)** Study of spacecraft design and operations. Prerequisite: MEEG 2013 and MEEG 2403 or consent of instructor.

**MEEG4703 Mathematical Methods in Engineering (Irregular)** Determinants, matrices, inverse of a matrix, simultaneous equations, eigenvalues, eigenvectors, coordinate transformations for matrices, diagonalization, square roots of a matrix, cryptography, and method of least squares. Vector algebra and calculus, Green's theorem, Stokes' theorem, and Gauss' divergence theorem. Index notation, epsilon-delta identity, and Cartesian tensors. Curvilinear coordinates, base vectors, and covariant and contravariant tensors. Applications to mechanics. Prerequisite: MATH 2574.

**MEEG4903H Honors Mechanical Engineering Research (Sp, Fa)** Independent research for mechanical engineering honors students. Prerequisite: Student must be enrolled in Honors Program.

**MEEG491V Special Projects (Sp, Su, Fa) (1-6)** May be repeated for up to 6 hours of degree credit.

**MEEG491VH Honors Special Projects (Sp, Su, Fa) (1-6)**

**MEEG5033 Advanced Mechanics of Materials I (Irregular)** Combined stress, theories of failure, thick-walled cylinders, bending of unsymmetrical sections, torsion in noncircular section, plate stresses, and strain energy analysis. Prerequisite: MEEG 2013 and MEEG 3013.

**MEEG5103 Structural Dynamics (Irregular)** The forced and random vibration response of complex structural systems are studied through the use of the finite element method. Computational aspects of these problems are discussed and digital computer applications undertaken. Prerequisite: MEEG 3113 and MEEG 4103 and graduate standing.

**MEEG5113 Modal Analysis Methods (Irregular)** Fundamental concepts of both analytical and experimental modal analysis methods are examined and applied to the study of complex structural systems. Computational aspects of these problems are discussed, and digital computer applications undertaken with experimental verification. Prerequisite: MEEG 5103 and graduate standing.

**MEEG5123 Finite Elements Methods II (Irregular)** Development and application of finite element (FE) methods used to solve transient and two-dimensional boundary value problems. Applications are taken from solid and fluid mechanics, heat transfer, and acoustics. Emphasis is placed on the FE methodology in order to make accessible the research literature and commercial software manuals, and to encourage responsible use and interpretation of FE analysis. Prerequisite: MEEG 4123 and graduate standing or consent.

**MEEG5143 Advanced Machine Design (Su)** Application of advanced topics such as probability theory, fracture mechanics, and computer methods to the design and analysis of complex mechanical systems. Prerequisite: MEEG 4103 and graduate standing.

**MEEG5253 Bio-Mems (Sp)** Topics include the fundamental principles of microfluidics, Navier-Stokes Equation, bio/abio interfacing technology, bio/abio hybrid integration of microfabrication technology, and various biomedical and biological problems that can be addressed with microfabrication technology and the engineering challenges associated with it. Lecture 3 hours per week. Prerequisite: MEEG 3503 or CVEG 3213 or CHEG 2133. (Same as BENG 5253)

**MEEG5263 Introduction to Micro Electro Mechanical Systems (Fa)** A study of mechanics and devices on the micro scale. Course topics will include: introduction to micro scales, fundamentals of microfabrication, surface and bulk micromachining, device packaging, device reliability, examples of micro sensors and actuators. Recitation three hours per week.

**MEEG5273 Electronic Packaging (Irregular)** An introductory treatment of electronic packaging from single chip to multichip including materials, electrical design, thermal design, mechanical design, package modeling and simulation, processing considerations, reliability, and testing. Credit cannot be earned for both MEEG 5273

and ELEG 5273. Prerequisite: (ELEG 3213 or ELEG 3913) and MATH 3404. (Same as ELEG 5273)

**MEEG5303 Physical Metallurgy (Fa)** Physical and chemical properties of solids and the application of materials in commerce. Prerequisite: MEEG 2303.

**MEEG5323 Physical and Chemical Vapor Deposition Processes (Irregular)** Fundamental principles of materials behavior in the deposition of films by PVD/CVD. Topics include kinetic theory of gases, statistical mechanics, plasmas, diagnostics, reaction rate theory, nucleation and growth, crystal structures and defects in thin films, advanced characterization techniques for thin films, and applications in microelectronics, tribology, corrosion, bio- and nano-materials. Prerequisite: Graduate standing in Engineering or consent of instructor.

**MEEG5403 Advanced Thermodynamics (Sp)** An in-depth review of classical thermodynamics, including availability analysis, combustion, and equilibrium, with an introduction to quantum mechanics and statistical thermodynamics. Prerequisite: Graduate standing in Engineering or consent of instructor.

**MEEG5423 Statistical Thermodynamics (Irregular)** Concepts and techniques for describing high temperature and chemically reactive gases from a molecular point of view. Introductory kinetic theory, chemical thermodynamics, and statistical mechanics applied. Prerequisite: MEEG 2403 and MATH 2574.

**MEEG5433 Combustion (Even years, Fa)** Introduction to combustion of solid, liquid, and gaseous fuels. Equilibrium and kinetics of hydrocarbon oxidation, laminar and turbulent flames, premixed and non-premixed combustion processes, ignition, quenching, stability, emissions and diagnostics. Prerequisite: Graduate standing in Engineering or consent of instructor.

**MEEG5453 Advanced Heat Transfer (Fa)** More in-depth study of topics covered in MEEG 4413, Heat Transfer, and coverage of some additional topics. Prerequisite: MEEG 4413 or CHEG 3143 or equivalent.

**MEEG5473 Radiation Heat Transfer (Even years, Su)** Spectral analysis, radiant exchange in gray and non-gray enclosures, gas radiation, and multi-mode heat transfer. Prerequisite: MEEG 5453 or equivalent.

**MEEG5503 Advanced Fluid Dynamics I (Sp)** A basic survey of the characteristics of fluid flow under a variety of conditions with examples. Begins with a derivation of the Navier-Stokes equations and an evaluation of the dimensionless groups found from these equations. Topics to be covered include viscous laminar and turbulent boundary layers, jets and wakes, Stokes flow, inviscid flows with and without free surfaces and turbulence. Prerequisite: MEEG 3503 and MATH 3404.

**MEEG5733 Advanced Numerical Methods (Irregular)** Numerical methods for the solution of linear and non-linear ordinary and partial differential equations; initial and boundary value problems; one-step and multi-step methods; predominantly finite difference but also finite element and control volume techniques; and computer applications. Graduate standing in Engineering or consent of instructor.

**MEEG590V Research (Sp, Su, Fa) (1-6)** Fundamental or applied research. Prerequisite: Graduate standing.

**MEEG591V Special Problems (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**MEEG600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**MEEG6263 Advanced Micro Electro Mechanical Systems (Irregular)** An advanced study of microscale mechanics and devices. The course material will include in depth discussion of 3 to 4 current MEMS technology areas such as microfluidics, optical MEMS, and inertial sensors. Students will also be required to fabricate and test a functional MEMS device in a processing laboratory. Prerequisite: MEEG 5263.

**MEEG6273 Advanced Electronic Packaging (Irregular)** An advanced treatment of electronic packaging concentrating on multichip modules. Topics covered include electrical design, thermal design, mechanical design, package modeling and simulation, computer-aided engineering and design, processing limitations on MCM performance, reliability, testing, and economic considerations. Prerequisite: ELEG 5273. (Same as ELEG 6273)

**MEEG6800 Graduate Seminar (Sp, Fa)** A periodic seminar devoted to mechanical engineering research topics. Course includes letter grades A, B, C, D, and F as well as CR.

**MEEG700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Candidacy.

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### Microelectronics-Photonics (MEPH)

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**MEPH488V MicroEP Undergraduate Research (Sp, Fa) (1-3)** Special research topics associated with undergraduates enrolled in the Microelectronics-Photonics minor program, or by special permission of the microEP Director to undergraduate students

engaged in research with microEP faculty members. May be repeated for up to 6 hours of degree credit.

**MEPH5383 Research Commercialization and Product Development (Sp)** This survey course examines research commercialization through analysis of IP, technology space, market space, manufacturability, financials, and business plans. Entrepreneurial behaviors and product development within large companies are also discussed. A case study using a current UA faculty member's research commercialization effort will be developed. Prerequisite: Graduate Standing.

**MEPH5611 Research Communication Seminar of MS Students (Sp, Fa)** This course serves as a forum for MS students to develop oral presentation skills and to exchange research ideas. Research presentations will be on various topics in the area of micro to nanoscale materials, processing, and devices, with research management and planning also being addressed. Prerequisite: Graduate standing.

**MEPH5713 Advanced Nanomaterials Chemistry (Irregular)** Science and engineering graduates are using more nanomaterials, and modern industry demands that its scientists and engineers have materials chemistry knowledge. Materials from the micro to nanoscale will be examined in this course from the perspective of fundamental chemistry principles to build a picture of tomorrow's materials. May be repeated for up to 3 hours of degree credit.

**MEPH5723 Physics at the Nanoscale (Irregular)** This is a cross-disciplinary course that is focused on teaching nanoscience and engineering by studying surface science, the building and analysis of quantum-confined structures, and related nano manufacturing processes. Students will achieve an integrated knowledge of the concepts of surface science, quantum mechanics, nano processing and manipulation, and techniques of materials research. (Same as PHYS 5723)

**MEPH5733L Fabrication at the Nanoscale (Sp)** This hands-on lab course will cover the disciplines needed to make active electronic and photonic devices utilizing nanoscale structures and fabrication techniques presently used in research and industry. Prerequisite: Graduate standing and permission of the instructor.

**MEPH5742 Transmission Electron Microscopy Theory and Operation (Irregular)** This new laboratory course will introduce students to practical electron microscopy and to the operation of the Titan S/TEM for examination of sub-angstrom examination of materials. Students will learn how to conduct a TEM study, how to operate the TEM, and how to extract and interpret useful information. Prerequisite: Graduate standing.

**MEPH5811 1st Year Operations Seminar - Infrastructure Management (Fa)** Weekly seminar for 1st year Microelectronics-Photonics graduate students to discuss issues that increase professional performance in technology-centered organizations. The discussions will focus on issues that affect organizational infrastructure, career planning, organizational structures, and may include examples from current events. Prerequisite: Graduate standing.

**MEPH5821 Ethics for Scientists and Engineers (Su)** This course will introduce methods useful in the practice of ethical decision making in the high technology academic and industrial work place. An emphasis will be placed on applying the methods discussed in the text to student and instructor past professional experiences. Prerequisite: graduate standing.

**MEPH5832 Proposal Writing and Management (Su)** This course introduces factors that affect proposal success in both the academic and industrial arenas; demonstrates different approaches to writing successful proposals; and introduces students to the legal responsibilities and ramifications of proposal management. Students will write two proposals for peer review and formal evaluation. Prerequisite: Graduate standing.

**MEPH587V Special Topics in Microelectronics-Photonics (Irregular) (1-4)** Consideration of current microelectronic-photonic topics not covered in other courses. One section will be created for each topic only after a syllabus is submitted to the microEP office by the faculty member teaching the course. May be repeated for up to 9 hours of degree credit.

**MEPH588V Special Problems in Microelectronics-Photonics (Irregular) (1-3)** Opportunity for individual study of advanced subjects related to a graduate degree in Microelectronics-Photonics to suit individual requirements. One section will be created for each student only after a syllabus is submitted to the microEP office by the supervising faculty member. May be repeated for up to 6 hours of degree credit.

**MEPH5911 1st Year Operations Seminar - Personnel Management (Sp)** Weekly seminar for 1st year Microelectronics-Photonics graduate students to discuss issues that increase professional performance in technology-centered organizations. The discussions will focus on issues that affect personnel management, team building and structures, and may include examples from current events. Prerequisite: Graduate standing.

**MEPH6611 Research Communication Seminar of PhD Students (Sp, Fa)** This course serves as a forum for Ph.D.

students to develop oral presentation skills and to exchange research ideas. Research presentations will be on various topics in the area of micro to nanoscale materials, processing and devices, with research management and planning also being addressed. Prerequisite: Graduate standing.

**MEPH6811 2nd Year Operations Seminar - Management and Leadership (Fa)** Weekly seminar for 2nd year Microelectronics-Photonics graduate students to discuss issues that increase professional performance in technology-centered organizations. The discussions will focus on issues that affect management and leadership effectiveness and efficiency, and may include examples from current events. Prerequisite: Graduate standing.

**MEPH6911 2nd Year Operations Seminar - Advanced Management and Leadership (Sp)** Weekly seminar for 2nd year Microelectronics-Photonics graduate students to discuss advanced issues that increase professional performance in technology-centered organizations. The discussions will focus on the complex issues that affect management and leadership effectiveness and efficiency, and may include examples from current events. Prerequisite: Graduate standing.

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### Middle Eastern Studies (MEST)

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**MEST2003 Islam in History, Practice and Experience (Sp, Su, Fa)** This course introduces Islam as a global religion and world civilization, including study of the Qur'an, prophet Muhammad, ritual and community practices, metaphysics, mysticism, art, literature, and sacred and critical history.

**MEST2013 Gateways to the Middle East (Sp, Su, Fa)** This course is designed to provide students with fundamental building blocks for understanding the contemporary Middle East/Islamic World. Students will be introduced to a variety of disciplinary approaches to the study of the geo-cultural region, including history, politics, arts and literature, religions and cultures, social geography, and economics.

**MEST399V MEST: Honors Thesis (Irregular) (1-3)** Middle East Studies Honors research, readings and thesis. Prerequisite: Junior standing.

**MEST4003 Middle East Studies Colloquium (Sp, Su, Fa)** An interdepartmental colloquium with an annual change in subject required of all students in the Middle East studies program. Prerequisite: Sophomore standing. May be repeated for up to 6 hours of degree credit.

**MEST4003H Honors Middle East Studies Honors Colloquium (Sp, Su, Fa)** May be repeated for up to 3 hours of degree credit.

**MEST410V Special Topics in Middle East, North Africa & Mediterranean Studies (Irregular) (1-3)** Various Topics in Middle East Studies: classes in lecture and seminar formats will focus on the Middle East, North Africa and Mediterranean will specialization in anthropology, art and architecture, regional culture and geography, history, political sciences, and regional language and literature. Prerequisite: Junior standing. May be repeated for up to 12 hours of degree credit.

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### Management (MGMT)

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**MGMT3563 Management Concepts and Organizational Behavior (Irregular)** Business students may not receive credit for this course. Course introduces students to fundamental concepts of management practice with particular emphasis on managing human behavior in organizations. Addresses the planning, organizing, directing, and controlling functions performed by managers as these functions relate to managing human resources. Provides survey of critical management concepts; enables students to develop analytical and problem solving skills through case studies and experimental exercises. Students may not receive credit for both WCOB 2033 and MGMT 3563.

**MGMT3933 Entrepreneurship and New Venture Development (Fa)** The role of the entrepreneur in starting up new businesses. Identification of new venture opportunities and the evaluation of their feasibility.

**MGMT4003H Honors Management Colloquium (Irregular)** Explores events, concepts and/or new developments in the field of Management. Prerequisite: Senior standing.

**MGMT4103 Special Topics in Management (Irregular)** Explores trends, concepts, and important developments in management as they impact on organizational performance. Topics are selected by the Management Department faculty for each semester the course is offered.

**MGMT4103H Honors Special Topics in Management (Irregular)** Explores trends, concepts, and important developments in management as they impact on organizational performance. Topics are selected by the Management Department faculty for each semester the course is offered.

**MGMT4243 Ethics and Corporate Responsibility (Sp, Fa)** A comprehensive and critical examination of traditional and current

ethical theories and approaches that guide business decision-making, ethical issues that affect business decisions, and ethics related to the various business disciplines.

**MGMT4253 Leadership (Sp, Fa)** This course offers a foundation for understanding and evaluating organizational leadership. It is designed to assist students in developing frameworks for understanding and enacting leadership. This course examines topics such as the nature and foundation of the leader-follower relationship, models that explain effective leadership, and the interface of leadership with gender, ethics, and culture. Prerequisite: WCOB 2033 or MGMT 3563.

**MGMT4263 Organizational Change and Development (Sp, Fa)** This course will develop diagnostic and intervention skills that can be applied to identifying and overcoming problems of morale and productivity in organizations. A variety of behavioral methods will be covered. Prerequisite: WCOB 2033 or MGMT 3563.

**MGMT4433 Small Enterprise Management (Sp)** Small enterprise opportunities and problems emphasizing innovation, management planning and control, financing, marketing and legal requirements. Emphasis on application of management knowledge to small enterprise management. Prerequisite: MGMT 3933.

**MGMT450V Independent Study (Irregular) (1-3)** Permits students on individual basis to explore selected topics in management. May be repeated for up to 3 hours of degree credit.

**MGMT4583 International Management (Sp)** Develops an understanding of international business management and the cultural environments in which IB exists today. Students examine international business practices and learn about unique elements of business as it practiced in selected nations and diverse cultures.

**MGMT4943 Organizational Staffing (Sp, Fa)** In-depth study of theoretical, legal, methodological, and substantive issues related to selection, performance appraisal, and development of employees. Students participate in individual and group projects designed to provide theoretical and practical skills related to staffing. Prerequisite: WCOB 1033.

**MGMT4953 Organizational Rewards and Compensation (Sp, Fa)** Develops an understanding of reward systems theory and its application to the design of compensation systems. Provides theoretical and legal background and practical applications for the use of reward systems in attracting, motivating, and retaining employees. Prerequisite: WCOB 1033.

**MGMT4993 Entrepreneurship Practicum (Sp, Su, Fa)** Hands-on management of an actual on-going business. Students will gain experience working in, making decisions about, and managing a business. Topics covered include accounting, economics, finance, information systems, law, logistics, management, and marketing. Entrance by application only. May be repeated for up to 6 hours of degree credit.

**MGMT5213 Business Foundations for Entrepreneurs (Sp)** Introduction to the fundamental business concepts an entrepreneur needs to know to evaluate and launch a successful new venture.

Topic areas include recruitment, selection, motivation and management of employees, market analysis and the marketing mix, financial strategies and accounting for funds, economic considerations, and the management of operations. Prerequisite: Graduate standing.

**MGMT5223 Managing & Leading Organizations (Fa)** Management for a global environment. The class will cover interpersonal workplace skills such as leadership and motivation, along with the management of human capital through well designed recruitment, selection, performance evaluation, compensation, and quality control systems.

**MGMT5313 Strategic Management (Sp)** Strategy formulation, strategy implementation, and other topics related to the long-term success of the firm. Includes role of the general manager, international issues, and the impact of management fads on decision making. Prerequisite: MBAD 5212 and MBAD 5222 and MBAD 5232.

**MGMT5323 New Venture Development (Fa)** Focuses on the identification and analysis of new venture opportunities and how entrepreneurs acquire the human and financial resources needed to develop successful businesses. Topics include market analysis, development of products and services, negotiation, developing and executing business plans, and new venture financing.

**MGMT5363 Innovation & Creativity (Sp)** This class will provide a framework for developing, assessing and implementing innovations in start-ups and established businesses. Focus is on creative decision making, managing for innovation, strategic analysis of innovations, and implementation of innovations. Aimed at entrepreneurs, brand managers, and managers in industries where innovation is a key strategic capability.

**MGMT5993 Entrepreneurship Practicum (Sp, Su, Fa)** Hands-on management of an actual on-going business. Students will gain experience working in, making decisions about, and managing a competitive business. Students will be required to analyze the business in a term paper or other integrative assignment. Entrance by application only.

**MGMT6113 Seminar in Organizational Behavior (Irregular)** Survey of theoretical and empirical literature in organizational behav-

ior. Stresses critical evaluation of current writing in the field and its integration with prior research. Covers topics relating to motivation, individual differences, job attitudes, social influence processes, and group dynamics. Prerequisite: Admission to a Ph.D. program.

**MGMT6123 Seminar in Organization Theory (Irregular)** This Ph.D.-level seminar presents an overview and introduction into organization theory literature. Emphasis on the development of relevant schools of thought, changes in the content of the traditional or 'mainstream' themes, current topics, schools of thought, and future directions are examined. Prerequisite: Admission to a Ph.D. program.

**MGMT6133 Seminar in Strategy Research (Irregular)** This Ph.D.-level seminar presents an overview and introduction into the strategic management literature. Emphasis on both the content and process of the extant research. Relevant theory, methods, 'mainstream' themes, current topics, schools of thought, and future directions are examined. Prerequisite: Admission to a Ph.D. program.

**MGMT6213 Seminar in Research Methods (Irregular)** Familiarizes students with the principles and techniques underlying research in management and organizations. Issues of basic philosophy of science and research methods are covered. Special attention given to the practical problems of research design, measurement, data collection, sampling, and interpretation in conducting research in management and in organizations. Prerequisite: Admission to a Ph.D. program.

**MGMT6223 Seminar in Management Topics (Irregular)** Seminar in special research topics in management. Topics vary depending upon instructor. Prerequisite: Admission to a Ph.D. program. May be repeated for up to 3 hours of degree credit.

**MGMT6233 Seminar in Human Resource Management (Irregular)** Provides an overview of major issues in human resource management. Designed to familiarize students with the seminal research in human resource management, and to provide them with the conceptual and methodological tools necessary to do research in the area. Prerequisite: Admission to a Ph.D. program.

**MGMT636V Special Problems in Management (Sp, Fa) (1-6)** Individual reading and research. May be repeated for up to 6 hours of degree credit.

**MGMT700V Doctoral Dissertation (Sp, Fa) (1-18)** Prerequisite: Candidacy.

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### Army ROTC (MILS)

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**MILS1001 Basic Outdoor Skills and Leadership Introduction (Fa)** Incorporates various outdoor field craft skills involving both classroom and outdoor instruction. Subjects include small group leadership, rappelling, basic map reading, water safety and first aid. Introduction to safe use of a rifle and basic marksmanship. Introduction to organization, values, and role of the Army. Classroom 1 hour per week. Lab 2 hours per week.

**MILS1011 Rappelling, Outdoor Field Craft and Leadership Development (Sp)** Incorporates various outdoor field craft involving both classroom and outdoor instruction. Subjects include basic rappelling/mountaineering, intermediate map reading/ orienteering, first aid and outdoor cold/hot weather survival skills. Introduction to small group leadership principles. Classroom 1 hour per week. Lab 2 hours per week.

**MILS1101 Basic Marksmanship (Fa)** Introduction to safe use of a rifle and practical application of rifle marksmanship. Course includes weapons safety, mechanics, capabilities, and fundamentals of marksmanship. Includes visit to fire at a local indoor rifle range. Materials and equipment furnished by Department of Military Science.

**MILS1211 Basic Outdoor Field Craft and Skills (Sp, Fa)** Introduction to basic military survival skills and outdoor field craft. Subjects include cold/hot weather survival, water procurement methods, expedient field shelters, signaling, map reading and rappelling technique. Materials and equipment furnished by Department of Military Science. Classroom 2 hours per week.

**MILS2002 Leadership Development I (Fa)** Continuation of basic skills presented in MILS 1001 and MILS 1011. Course focus is on small unit leadership, team building and management skills. Includes an introduction to small unit tactics. Students develop leadership foundations by leading discussions, developing and briefing operation plans using the military decision making model. Classroom 2 hours per week. Lab 1 hour per week. Corequisite: Lab component. Prerequisite: MILS 1001 and MILS 1011 or approval of Professor of Military Science.

**MILS2012 Leadership Development II (Sp)** Continuation of leadership skills presented in MILS 2002. Course focus is on decision making process, time management, and leadership skills. Includes an introduction to military writing and basic tactics. Cadets continue training in land navigation, first aid, and outdoor field craft. Classroom 2 hours per week. Lab 1 hour per week. Corequisite: Lab component. Prerequisite: MILS 1001 and MILS 1011 or approval of Professor of Military Science.

**MILS2101 Advanced Rifle Marksmanship (Sp)** Course to

teach students the fundamentals of Advanced Rifle Marksmanship. Class is conducted once a week with topics including: Air rifle, small bore firing, advanced practical exercises of different shooting positions and marksmanship competition with other universities. Prerequisite: MILS 1101.

**MILS3004 Applied Leadership I (Fa)** Development of managerial and leadership abilities, maximizing performance-oriented 'hands-on' training. Students learn advanced infantry tactics and demonstrate their leadership potential using this medium. Students are required to lead in drill and ceremony, physical training, and tactical infantry situations. The training is intended to prepare the student for the ROTC Advanced Camp experienced normally in the summer prior to the senior year or 4th year of ROTC. Lecture 3 hours, laboratory 3 hours per week, plus 3 hours of physical training are conducted weekly. One weekend field training exercise is required per semester. Corequisite: Lab component. Prerequisite: Junior standing plus one of the following conditions: completion of ROTC basic camp, veteran status, or completion of basic training with any component of the U.S. Armed Forces.

**MILS3014 Applied Leadership II (Sp)** Development of managerial and leadership abilities, maximizing performance-oriented 'hands-on' training. Students learn advanced infantry tactics and demonstrate their leadership potential using this medium. Students are required to lead in drill and ceremony, physical training, and tactical infantry situations. The training is intended to prepare the student for the ROTC Advanced Camp experienced normally in the summer prior to the senior year or 4th year of ROTC. Lecture 3 hours, laboratory 3 hours per week, plus 3 hours of physical training are conducted weekly. One weekend field training exercise is required per semester. Corequisite: Lab component. Prerequisite: Junior standing plus one of the following conditions: completion of ROTC basic camp, veteran status, or completion of basic training with any component of the U.S. Armed Forces.

**MILS4001 Contemporary Military Issues (Sp, Fa)** Individual study for advanced undergraduates. Students will research, write a paper, and give an oral presentation of a current military issue. Prerequisite: PMS approval.

**MILS4004 Advanced Leadership I (Fa)** The study of various military organizations and their role in military operations. Discussion of command and staff management in military organizations, executive responsibility of Army commissioned officers, service customs, courtesies, and traditions. The senior year includes the study of personnel management, professional ethics, the military justice system, and the Army's training and maintenance management system. Lecture 3 hours, laboratory 3 hours, physical training 3 hours per week. MS IV cadets plan and participate in 1 field training exercise per semester. Corequisite: Lab component. Prerequisite: Successful completion of MS III course work (MILS 3004 and MILS 3014).

**MILS4011 Advanced Military Correspondence (Sp, Fa)** Practicum for advanced undergraduates. Students submit prepared military correspondence projects written in the military style using military forms and formats. Prerequisite: PMS approval.

**MILS4014 Advanced Leadership II (Sp)** The study of various military organizations and their role in military operations. Discussion of command and staff management in military organizations, executive responsibility of Army commissioned officers, service customs, courtesies, and traditions. The senior year includes the study of personnel management, professional ethics, the military justice system, and the Army's training and maintenance management system. Lecture 3 hours, laboratory 3 hours, physical training 3 hours per week. MS IV cadets plan and participate in 1 field training exercise per semester. Corequisite: Lab component. Prerequisite: Successful completion of MS III course work.

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### Marketing (MKTG)

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**MKTG3433 Introduction to Marketing Strategy (Fa)** Examines strategies, tactical, and operational decisions related to contemporary marketing activities. Topics covered include product, services and international strategies in consumer and business markets. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143.

**MKTG3553 Consumer Behavior (Fa)** Analyzes consumer motivation, buying behavior, market adjustment, product innovation and adaptation; consumer market measurement, including survey of economic, behavioral science theories of consumer market behavior, producer and intermediary reactions. Consumer decision making is evaluated as to psychological drives, sociological concepts used by producers, channel intermediaries, consumers; considers methods, techniques for measuring consumer behavior, and analyzing consumer markets. Prerequisite: MKTG 3433.

**MKTG3633 Marketing Research (Sp)** Research designs, techniques, and analyses of primary and secondary data for the purposes of (1) developing market forecasts and segmentation analyses; (2) strategy implementation determining product development, pricing, distribution, and promotion decisions; and (3) monitoring customer attitudes, motivations and satisfaction. Prerequisite: MKTG 3433 and

WCOB 1033.

**MKTG4003H Honors Marketing and Transportation Colloquium (Irregular)** Explores events, concepts and/or new developments in the field of Marketing and/or Transportation. Prerequisite: Senior standing.

**MKTG4103 Marketing Topics (Irregular)** Special topics in marketing not available in other courses. Topics are selected by the Marketing faculty for each semester each course is offered. Prerequisite: MKTG 3433. May be repeated for up to 6 hours of degree credit.

**MKTG4233 Integrated Marketing Communications (Sp, Fa)** The theory, knowledge, and application relevant to the coordination of marketing communications including advertising, personal selling, sales promotion, public relations, and publicity. Prerequisite: MKTG 3433.

**MKTG4343 Selling and Sales Management (Sp, Fa)** Examines how organizations and individuals communicate value and obtain desired results through the process of personal selling and customer relationship management, along with the role of sales management in the development of people and resource utilization within the firm. Prerequisite: MKTG 3433.

**MKTG4433 Retail Strategy (Sp)** Concentrates on planning to meet the objectives and satisfy the retail marketing concept. Attention is devoted to retail format, competition among retail institutions, determination of store location, merchandise lines, atmospherics, and levels of customer service provided with the sale of consumer products. Prerequisite: MKTG 3433.

**MKTG4443 Retail Buying and Merchandise (Sp, Fa)** Examination of supplier and buyer responsibilities and decisions associated with product assortment depth, budgets, promotions, inventory investment and control, and gross margin management for consumer goods including apparel, food, and durables. Prerequisite: MKTG 3433.

**MKTG4633 Global Marketing (Sp, Fa)** Examines differences in global environment; how cultural considerations, political, legal, and economic conditions affect market entry strategies and marketing mix decisions; development of marketing plan for global environments. Prerequisite: MKTG 3433.

**MKTG4853 Marketing Management (Sp)** Strategic planning and management of the marketing function within the firm from a managerial viewpoint. Focus on the development and management of marketing strategies and tactics related to product, pricing, promotion, and distribution decisions. Prerequisite: MKTG 3633 and MKTG 3553.

**MKTG5103 Retail Consumer Marketing (Sp)** Introduction to marketing concepts and practices as applied to the retail consumer environment. Focuses on the strategic development, positioning, and management of products, promotion, distribution, pricing, and store environments in building customer relationships from retailer and supplier perspectives. (Core)

**MKTG5333 Retailing Strategy and Processes (Sp)** Strategic planning and operation of retailing organizations. Investigation of the various types of retailing with emphasis on both the strategic and functional aspects in retail processes.

**MKTG5433 Consumer and Market Research (Fa)** Modern marketing research methods and analyses applied to consumers, shoppers, and buyers of goods and services sold in competitive retail environments. Attention is given to both quantitative and qualitative methods, analyses, interpretation, and decision making. Prerequisite: MKTG 5103.

**MKTG5533 Strategic Category Management (Su)** Strategic planning and management of brands and product categories from both manufacturing and retailing perspectives. Focus is on the product brand development, pricing, distribution, and promotion of brands and their strategic and functional roles in the product mix.

**MKTG5543 Category Analysis and Management (Irregular)** Analysis and management of brands and product categories from supplier and retailing strategic perspectives. Focus is on brand and category strategic and functional roles in the merchandising mix as well as their development, pricing, distribution, promotion, and in-store placement.

**MKTG5553 Shopper, Buyer, and Consumer Behavior (Fa)** Behavioral and social science concepts applied to retail shoppers, buyers, and consumers of products and services. Attention is given to research on the cognitive, affective, and experiential aspects involved in the acquisition, consumption, and disposal of products and services by individuals and households. Prerequisite: MKTG 5103.

**MKTG636V Special Problems in Marketing (Irregular) (1-6)** Individual research problems. May be repeated for up to 6 hours of degree credit.

**MKTG6413 Special Topics in Marketing (Irregular)** Seminar in special topics in marketing. Topics vary depending upon the instructor. May be repeated for up to 3 hours of degree credit.

**MKTG6433 Seminar in Research Methods (Irregular)** Extensive review of literature illustrative of marketing research studies. Focuses upon theoretical foundations of research design, methodology, and analysis as well as interpretation of univariate, bivariate, and

multivariate data in marketing theory exploration. May be repeated for up to 3 hours of degree credit.

**MKTG6443 Seminar in Marketing Theory (Irregular)** Comprehensive survey and critical review of the history of marketing thought and contemporary schools of thought in marketing discipline. In-depth research, review, synthesis, and a research proposal will be required in a selected topic from the perspectives of advancing marketing theory. Prerequisite: MKTT 5103 and MKTT 5303.

**MKTG6453 Seminar in Transportation and Business Logistics (Irregular)** Underlying theories and problems related to the development of logistical systems in the U.S. Attention focused on transport economics, the role of government in providing transportation facilities, and managerial issues related to integrating transportation, inventory control, warehousing, customer service levels, and facility location.

**MKTG700V Doctoral Dissertation (Sp, Fa) (1-18)** Prerequisite: Candidacy.

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### Music Literature (MLIT)

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**MLIT1003 Basic Course in the Arts: Music Lecture (Sp, Su, Fa)** Introduction to music. Lecture 3 hours per week providing experience in guided listening. Acquisition of vocabulary and certain fundamentals of music.

**MLIT1003H Honors Music Lecture (Sp, Su, Fa)**

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### Applied Music (Class) (MUAC)

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**MUAC1121 Italian for Singers (Fa)** Training in proper pronunciation and inflections of Italian as applied to singers. Two meetings per week.

**MUAC1141 German for Singers (Even years, Sp)** Training in proper pronunciation and inflection of German as applied to singing. Two meetings per week.

**MUAC1151 French for Singers (Odd years, Sp)** Training in proper pronunciation and inflections of French as applied to singing. Two meetings per week.

**MUAC1161 Class Instruction in Piano for Non-Music Majors (Sp, Fa)** Beginning instruction in piano. Does not fulfill the class piano requirement for music majors.

**MUAC1221 Piano Class for Music Majors I (Fa)** Training in functional piano skills for music majors. Two meetings per week. Prerequisite: Music major with degree plan code of MUSCBA/HA or MUSCBM/HM.

**MUAC1231 Piano Class for Music Majors II (Sp)** A continuation of MUAC 1221. Two meetings per week. Prerequisite: Music major pursuing a degree of Bachelor of Arts or Honors Bachelor of Arts or Bachelor of Music or Honors Bachelor of Music.

**MUAC1301 Class Instruction in Violin and Viola (Fa)** Beginning class instruction in violin and viola. For music education majors only or with instructor's consent. Prerequisite: Music Education majors pursuing a concentration in Piano Education, Voice Education, String Education or Woodwind Brass Percussion Education; or instructor's consent.

**MUAC1311 Class Instruction in Violoncello and String Bass (Sp, Fa)** Beginning class instruction in violoncello and string bass. Prerequisite: Music education major pursuing a degree in Piano Education, Voice Education, String Education or Woodwind Brass Percussion Education; or instructor's consent.

**MUAC1321 Class Instruction in Guitar (Sp, Fa)** Beginning class instruction in guitar. Students must provide their own instruments.

**MUAC1331 Class Instruction in Clarinet and Saxophone (Sp, Fa)** The elementary study of clarinet and saxophone. Beginning class instruction designed to familiarize the student with the basic playing skills and teaching techniques for the instruments. Prerequisite: Music education major pursuing a degree in Piano Education, Voice Education, String Education or Woodwind Brass Percussion Education; or instructor's consent.

**MUAC1341 Class Instruction in Flute (Fa)** The elementary study of flute. Beginning class instruction designed to familiarize the student with basic playing skills and teaching techniques of the instrument. Prerequisite: Music education major pursuing a degree in Piano Education, Voice Education, String Education or Woodwind Brass Percussion Education; or instructor's consent.

**MUAC1351 Class Instruction in High Brass Instruments (Sp, Fa)** The elementary study of the cornet, trumpet, and horn. Beginning class instruction designed to familiarize the student with the history, physics, basic playing skills, methods, materials, and teaching techniques of the high brass family. Prerequisite: Music education major pursuing a degree in Piano Education, Voice Education, String Education or Woodwind Brass Percussion Education; or instructor's consent.

**MUAC1361 Class Instruction in Low Brass Instruments (Sp, Fa)** The elementary study of the trombone, euphonium and tuba. Beginning class instruction designed to familiarize the student with the history, physics, basic playing skills, methods, materials,

and teaching techniques of the low brass family. Prerequisite: Music education major pursuing a degree in Piano Education, Voice Education, String Education or Woodwind Brass Percussion Education; or instructor's consent.

**MUAC1371 Teaching the Beginning Percussionist (Sp, Fa)**  
A study of the pedagogy and techniques needed to instruct middle school and junior high percussionists. Emphasis on elementary snare drum and marimba performance. Study of junior high band and orchestra methods, solos and ensemble music. Prerequisite: Music education major pursuing a degree in Piano Education, Voice Education, String Education or Woodwind Brass Percussion Education; or instructor's consent.

**MUAC1381 Class Instruction in Voice (Sp, Fa)** Fundamentals of vocalization and singing of English songs, including breathing, vowel clarity, and pronunciation of consonants.

**MUAC2211 Music Technology I (Sp, Su, Fa)** Students will develop skills in transcribing music using music notation software and learn about sound reinforcement systems. Prerequisite: MUAC 1231.

**MUAC2121 Music Technology II (Sp, Su, Fa)** Students will learn how to use MIDI sequencing and audio recording and editing software to produce accompaniment tracks and create compact discs of music and multimedia projects. Prerequisite: MUAC 1231.

**MUAC2141 Class Instruction in Oboe and Bassoon (Sp, Fa)** The elementary study of oboe and bassoon. Class instruction designed to familiarize the student with basic playing skills and teaching techniques of the instruments. Prerequisite: MUAC 1331 or MUAC 1341 and a Music education major pursuing a degree in Piano Education, Voice Education, String Education or Woodwind Brass Percussion Education; or instructor's consent.

**MUAC2221 Piano Class for Music Majors III (Fa)** A continuation of MUAC 1231. Two meetings per week. Prerequisite: Music major pursuing a degree of Bachelor of Arts or Honors Bachelor of Arts or Bachelor of Music or Honors Bachelor of Music.

**MUAC2231 Piano Class for Music Major IV (Sp)** A continuation of MUAC 2221. Two meetings per week. Prerequisite: Music major pursuing a degree of Bachelor of Arts or Honors Bachelor of Arts or Bachelor of Music or Honors Bachelor of Music.

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### Applied Music Private Inst (MUAP)

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**MUAP1001 Applied Voice/Instrument-Secondary Level (Sp, Su, Fa)** Private study at the secondary level.

**MUAP110V Applied Voice/Instrument (Sp, Su, Fa) (1-4)** Private study of the major instrument.

**MUAP3001 Applied Voice/Instrument-Secondary Level (Sp, Su, Fa)** Private study at the secondary level. Prerequisite: MUAP 1001.

**MUAP310V Applied Voice/Instrument (Sp, Su, Fa) (1-4)** Private study of the major instrument. Admission to 310 requires presentation of 4 semesters of MUAP 110 with grade of "B" or better. Prerequisite: MUAP 110V.

**MUAP310VH Honors Applied Voice/Instrument (Sp, Su, Fa) (1-4)** Private study of the major instrument. Admission to 310VH requires presentation of 4 semester of MUAP 110V with grade of "B" or better. Prerequisite: MUAP 110V

**MUAP3201 Applied Recital I (Sp, Su, Fa)** Preparation and performance of a public recital of a minimum of 25 minutes of music.

**MUAP4201 Applied Recital II (Sp, Su, Fa)** Preparation and performance of a public recital of a minimum of 50 minutes of music. Prerequisite: MUAP 3201.

**MUAP4201H Honors Applied Recital II (Sp, Su, Fa)** Preparation and performance of a public recital of a minimum of 50 minutes of music. Corequisite: MUAP 310VH.

**MUAP4301 Composition Recital (Sp, Su, Fa)** Preparation and performance of a public recital of a minimum of 50 minutes consisting of original musical compositions. May be repeated.

**MUAP5001 Applied Voice/Instrument-Secondary Level (Sp, Su, Fa)** Private study at the graduate secondary level.

**MUAP510V Applied Voice/Instrument (Sp, Su, Fa) (1-5)** Private study at the graduate level. Prerequisite: MUAP 310 or equivalent.

**MUAP5201 Graduate Recital I (Sp, Su, Fa)** Preparation and performance of a public recital of a minimum of 50 minutes of music.

**MUAP5211 Graduate Recital II (Sp, Su, Fa)** Preparation and performance of a public recital of a minimum of 50 minutes of music.

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### Music Education (MUED)

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**MUED2012 Introduction to Music Education (Sp)** A course designed to provide early experiences for the prospective music teacher. Students will become familiar with professional trends, music classroom organizational and management issues, and principles of effective education. Emphases will include basic psychological and philosophical orientation, as well as observations in public school classrooms. Required of all prospective Music Education majors.

**MUED3021 Supervised Practicum in Teaching Musical Skills (Sp, Su, Fa)** Provides for supervised teaching opportunities

with public school students in instrumental, choral, and elementary classes. Prerequisite: instrumental emphasis (band): MUAC 1221 & MUAC 1231, MUAC 1331, MUAC 1341, MUAC 1351, MUAC 1361 & MUAC 1371. Prerequisite for instrumental emphasis (string): MUAC 1221 & MUAC 1231, MUAC 1301, MUAC 1311 and any other three of those listed for "band" concentration. Prerequisites for vocal (elementary) emphasis: MUAC 1221 & MUAC 1231 and any four of those listed for "band" or "string" concentration. MUAC 1321 may also count toward this requirement.

**MUED3813 Music for Elementary Education Majors (Sp, Su, Fa)** Develops music knowledge, skills, and pedagogical techniques for use in the elementary classroom. Lecture 3 hours, keyboard laboratory 1 hour per week. Prerequisite: MUAC 1161.

**MUED3833 Music Education in the Elementary School (Sp, Su, Fa)** Concepts of elementary music education; methods, materials, curriculum design, and supervision in elementary school music.

**MUED4031 Seminar for Professional Entry into Music Education (Sp, Fa)** A seminar offered during student teaching semester to prepare the student for the role of a professional educator. Content includes professional ethics and conduct, classroom management, evaluation and grading, and application for employment.

**MUED4112 Pedagogy in Music Education (Fa)** A course presenting broad music teaching concepts and specific teaching behaviors. Students will experience the pedagogical teaching situation through the construct of effective communication practice. Emphases will be on providing a laboratory environment representative of public school classrooms. Required of all Music Education majors. Prerequisites: MUED 2012, MUED 3021, MUED 3833

**MUED4273 Methods for Teaching String Instruments (Odd years, Fa)** Methods and materials for students preparing to teach orchestral instruments and ensembles in the public schools.

**MUED4283 Teaching Vocal Music (Even years, Sp, Su)** Methods and materials used in teaching high school music.

**MUED4293 Instrumental Methods (Fa)** Problems of teaching instrumental music in the public schools.

**MUED451V Student Teaching: Elementary Music (Sp, Su, Fa) (4-8)** A minimum of five weeks and a maximum of ten weeks will be spent in an off-campus school, where the student will teach under supervision in the elementary classroom and will participate in other activities involving the school and community. Enrollment requirement is for a total of 12 hours and 15 weeks involvement in 452V and 451V. Corequisite: MUED 452. Prerequisite: Bachelor of Music degree in Music Education.

**MUED452V Student Teaching: Secondary Music (Sp, Su, Fa) (4-8)** A minimum of five weeks and a maximum of ten weeks will be spent in an off-campus school, where the student will teach under supervision in the elementary classroom and will participate in other activities involving the school and community. Enrollment requirement is for a total of 12 hours and 15 weeks involvement in 452V and 451V. Corequisite: MUED 451. Prerequisite: Bachelor of Music degree in Music Education.

**MUED477V Special Topics in Music Education (Irregular) (1-4)** Subject matter not covered in other sources. With permission, may be repeated for credit if topics are different.

**MUED5513 Seminar: Resources in Music Education (Sp, Su, Fa)** Study of the analytical and writing skills necessary for academic research in music education. Each student identifies one problem specific to music education, finds and reviews related literature and sources, develops a comprehensive bibliography, and writes a paper which synthesizes the research. Open to graduate students and undergraduates in honors in music education.

**MUED5653 Seminar: Issues in Music Education (Irregular)** A seminar exploring the relationships between the profession of teaching music and selected views about learning theories, teaching methods, philosophy, psychology, and other selected topics relevant to contemporary music education.

**MUED5733 Music Education in the Elementary School (Sp, Su, Fa)** Concepts of elementary music education; methods, materials, curriculum design, and supervision in elementary school music.

**MUED5811 Curriculum Design in Music (Sp, Su, Fa)** Goals and objectives in music education. Student will develop a curriculum for an actual or hypothetical music education program.

**MUED583V Workshop: Music in the Elementary School (Irregular) (1-18)** An in-service training workshop for elementary music teachers.

**MUED5862 Marching Band Techniques (Su)** Includes the place of the marching band in the school program, types of formations used, and selecting, arranging or writing the musical score.

**MUED5973 Tests and Measurement in Music (Sp)** This course will address the psychometric concepts of tests and measurement of music achievement, aptitude, attitude, and self assessment. The course will focus on the teaching and assessment of musical skills, musical responses, and will critically examine existing aptitude tests (Seashore, Watkins Farnum, Gordon, etc). Basic statistical

concepts and data analysis used in common testing scenarios will be introduced. Prerequisite: Graduate standing in music.

**MUED5983 Psychology of Music Behavior (Fa)** This course is an introduction to the psychology of music, and will adopt an interdisciplinary view toward the field, covering such topics as philosophical and sociological questions about the nature and function of music, the physiology of the ear, the physical and perceptual properties of sounds (acoustics), performance anxiety, preference and taste research, social and pedagogical attributes of performance, and behavioral musical responses. Prerequisite: Graduate standing.

**MUED599V Seminar (Su) (1-6)** May be repeated for up to 6 hours of degree credit.

**MUED600V Master's Thesis (Irregular) (1-6)** Preparation of a master's thesis as partial fulfillment of the requirement for the master's degree.

**MUED605V Independent Study (Sp, Su, Fa) (1-6)** Provides students with an opportunity to pursue special study of problems in music education. May be repeated for up to 6 hours of degree credit.

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### Music Ensemble (MUEN)

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**MUEN1531 Brass Ensemble (Sp, Fa)** Study and performance of chamber music for brass instruments. Rehearsal 2 hours per week.

**MUEN3341 Collegium Musicum (Sp, Fa)** Performance of early music various combinations of instruments and/or voices. Two hours rehearsal weekly.

**MUEN3401 Opera Theatre (Sp, Fa)** Study of opera through performances of scenes, chamber and major operatic production. Admission with director's approval.

**MUEN3411 Concert Choir (Sp, Su, Fa)** Three hours of rehearsal weekly, with extra rehearsals at the director's discretion. Admission with director's approval. No audition required prior to registration.

**MUEN3421 Inspirational Singers (Sp, Fa)** Performance of African-American literature with particular emphasis on Negro Spirituals and traditional/contemporary gospel music. No audition required to registration. Rehearsal 3 hours per week.

**MUEN3431 Symphony Orchestra (Sp, Su, Fa)** Rehearsal 3 hours per week with extra rehearsals at director's discretion. Admission with director's approval.

**MUEN3441 Marching Band (Fa)** Rehearsal 8 hours per week. Admission with director's approval.

**MUEN3451 Schola Cantorum (Sp, Fa)** Vocal ensemble limited to the more experienced singers. Rehearsal 5 hours per week. Admission with director's approval.

**MUEN3461 Wind Symphony (Fa)** Rehearsal 3 to 5 hours per week. Admission by audition and approval of the conductor. Corequisite: Lab component.

**MUEN3471 Jazz Performance Laboratory (Sp, Fa)** Training in the various styles of jazz and popular music. Rehearsal 3 hours per week. Admission by audition.

**MUEN3481 Campus Band (Fa)** Rehearsal 3 hours per week. Admission by audition and approval of the conductor.

**MUEN3501 Chamber Music (Sp, Su, Fa)** Performance of small ensemble music for any combination of instruments and/or voice. Rehearsal 3 hours per week.

**MUEN3511 Symphonic Band (Sp)** Rehearsal 3 hours per week. Admission by audition and approval of the conductor.

**MUEN3521 Woodwind Quintet (Sp, Fa)** Study and performance of music for woodwind quintet. Weekly coaching will emphasize intonation, blend, stylistic awareness, and ensemble precision. Repertoire ranges from the 18th to the 20th centuries. 3 hours of rehearsals weekly.

**MUEN3531 Brass Ensemble (Sp, Fa)** Study and performance of chamber music for brass instruments. Rehearsal 2 hours per week.

**MUEN3541 Accompanying (Sp, Fa)** Piano accompanying of vocal and instrumental soloists. Rehearsal 2 hours per week. Prerequisite: MUAP 110V.

**MUEN3551 Percussion Ensemble (Sp, Su)** Study and performance of ensemble music for multiple percussion instruments. Rehearsal 2 hours per week.

**MUEN3581 Vocal Ensemble (Sp, Su, Fa)** Study and performance of vocal chamber music. Rehearsal 2 hours per week for 1 hour of credit.

**MUEN3711 Flute Ensemble (Sp, Fa)** Study and performance of music for multiple flutes, including trios, quartets, quintets, and flute choir. Rehearsal 2 hours per week.

**MUEN3721 Clarinet Ensemble (Sp, Fa)** Study and performance of music for multiple clarinets, including trios, quartets, quintets, and clarinet choir. Rehearsal 2 hours per week.

**MUEN3731 Saxophone Ensemble (Sp, Fa)** Study and performance of music for multiple saxophones, including trios, quartets, quintets, and saxophone choir. Rehearsal 3 hours per week.

**MUEN3741 Double Reed Ensemble (Sp, Fa)** Study and



performance of music for multiple double reed instruments, including trios, quartets, quintets, and double reed choir. Rehearsal 2 hours per week.

- MUEN3751 Trumpet Ensemble (Sp, Fa)** Study and performance of music for multiple trumpets, including trios, quartets, quintets, and trumpet choir. Rehearsal 2 hours per week.
- MUEN3771 Trombone Ensemble (Irregular)** Study and performance of music for multiple trombones, including trios, quartets, quintets, and trombone choir. Rehearsal 2 hours per week.
- MUEN3781 Tuba Ensemble (Sp, Fa)** Study and performance of music for multiple combinations of tuba and euphonium, including trios, quartets, quintets, and low brass choir. Rehearsal 2 hours per week.
- MUEN3791 University Bassoon Ensemble (Sp, Fa)** Study and performance of music for multiple bassoons and contrabassoon, including trios, quartets, quintets, and bassoon choir. One hour of rehearsal weekly.
- MUEN5341 Collegium Musicum (Sp, Fa)** Performance of early music for various combinations of instruments and/or voices. Rehearsal 2 hours per week.
- MUEN5401 Opera Theatre (Sp, Fa)** Study of opera through performances of scenes, chamber and major operatic production. Admission with director's approval.
- MUEN5411 Concert Choir (Sp, Su, Fa)** Rehearsal 3 hours per week with extra rehearsals at the director's discretion. Admission with director's approval. No audition required prior to registration.
- MUEN5421 Inspirational Singers (Sp, Fa)** Performance of African-American literature with particular emphasis on Negro Spirituals and traditional/contemporary gospel music. No audition required to registration. Rehearsal 3 hours per week.
- MUEN5431 Symphony Orchestra (Sp, Su, Fa)** Rehearsal 3 hours per week with extra rehearsals at director's discretion. Admission with director's approval. Corequisite: Lab component.
- MUEN5441 Marching Band (Fa)** Rehearsal 8 hours per week. Admission with director's approval.
- MUEN5451 Schola Cantorum (Sp, Fa)** Vocal ensemble limited to the more experienced singers. Rehearsal 5 hours per week. Admission with director's approval.
- MUEN5461 Wind Symphony (Sp, Fa)** Rehearsal 3 to 5 hours per week. Admission by audition and approval of the conductor. Corequisite: MUEN 5460L.
- MUEN5471 Jazz Performance Laboratory (Sp, Fa)** Training in the various styles of jazz and popular music. Rehearsal 3 hours per week. Admission by audition.
- MUEN5481 Campus Band (Sp)** Rehearsal 3 hours per week. Admission by audition and approval of the conductor.
- MUEN5501 Chamber Music (Sp, Su, Fa)** Performance of small ensemble music for any combination of instruments and/or voice. Rehearsal 3 hours per week.
- MUEN5511 Symphonic Band (Sp)** Rehearsal 3 hours per week. Admission by audition and approval of the conductor.
- MUEN5521 Woodwind Quintet (Sp, Fa)** Study and performance of music for woodwind quintet. Weekly coaching will emphasize intonation, blend, stylistic awareness, and ensemble precision. Repertoire ranges from the 18th to the 20th centuries. 3 hours of rehearsals weekly.
- MUEN5541 Accompanying (Sp, Fa)** Piano accompanying of vocal and instrumental soloists. Rehearsal 2 hours per week. Prerequisite: MUAP 110.
- MUEN5551 Percussion Ensemble (Sp, Su)** Study and performance of ensemble music for multiple percussion instruments. Rehearsal 2 hours per week.
- MUEN5711 Flute Ensemble (Sp, Fa)** Study and performance of music for multiple flutes, including trios, quartets, quintets, and flute choir. Rehearsal 2 hours per week.
- MUEN5721 Clarinet Ensemble (Sp, Fa)** Study and performance of music for multiple clarinets, including trios, quartets, quintets, and clarinet choir. Rehearsal 2 hours per week.
- MUEN5731 Saxophone Ensemble (Sp, Fa)** Study and performance of music for multiple saxophones, including trios, quartets, quintets, and saxophone choir. Rehearsal 3 hours per week.
- MUEN5741 Double Reed Ensemble (Irregular)** Study and performance of music for multiple double reed instruments, including trios, quartets, quintets, and double reed choir. Rehearsal 2 hours per week.
- MUEN5751 Trumpet Ensemble (Sp, Fa)** Study and performance of music for multiple trumpets, including trios, quartets, quintets, and trumpet choir. Rehearsal 2 hours per week.
- MUEN5771 Trombone Ensemble (Irregular)** Study and performance of music for multiple trombones, including trios, quartets, quintets, and trombone choir. Rehearsal 2 hours per week.
- MUEN5781 Tuba Ensemble (Sp, Fa)** Study and performance of music for multiple combinations of tuba and euphonium, including trios, quartets, quintets, and low brass choir. Rehearsal 2 hours per week.
- MUEN5791 University Bassoon Ensemble (Sp, Fa)** Study

and performance of music for multiple bassoons and contrabassoon, including trios, quartets, quintets, and bassoon choir. One hour of rehearsal weekly.

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**Music History (MUHS)**

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- MUHS3703 History of Music to 1800 (Fa)** Survey of history of music in western culture from ancient Greece to 1800. Lecture 3 hours, listening/quiz laboratory 1 hour per week. Prerequisite: MLIT 1003 or MLIT 1003H; Music major pursuing a degree of Bachelor of Arts or Honors Bachelor of Arts or Bachelor of Music or Honors Bachelor of Music or Music minors or with instructor's consent.
- MUHS3713 History of Music from 1800 to Present (Sp, Fa)** Survey of the history of music in western culture from 1800 to present. Lecture 3 hours, listening/quiz laboratory 1 hour per week. Corequisite: Lab component. Prerequisite: MLIT 1003 or MLIT 1003H and MUHS 3703; Music major pursuing a degree of Bachelor of Arts or Honors Bachelor of Art or a degree of Bachelor of Music or Honors Bachelor of Music or Music minors or with instructor's consent.
- MUHS398VH Honors Independent Studies (Sp, Su, Fa) (1-2)** Independent projects in music history and literature. One hour credit per semester. Open to undergraduates in honors. May be repeated for up to 2 hours of degree credit.
- MUHS4253 Special Topics in Music History (Sp, Fa)** Topics not covered in MUHS 3703 or 3713, including history of American music, world music, music of Russia, and others. Satisfactory completion of the term paper in this class will fulfill the Fulbright College writing requirement. Prerequisite: MUHS 3703 and MUHS 3713.
- MUHS4623 Music History Review (Fa)** Review of the central data and concepts of music history, with emphasis on individual periods as needed by students enrolled. Credit in this course may not count toward the Master of Music or Master of Education degree.
- MUHS4703 Survey of String Literature (Irregular)** A survey of solo and chamber music literature involving stringed instruments. Prerequisite: MUAP 110 and MUTH 3613.
- MUHS4703H Honors Survey String Literature (Irregular)** A survey of solo and chamber music literature involving stringed instruments. Prerequisite: MUAP 110 and MUTH 3613.
- MUHS4733 Survey of Symphonic Literature (Even years, Sp)** A survey of the symphonic literature from its beginning to the present.
- MUHS4763 Survey of Vocal Literature I (Even Years, Fa)** A survey of concert literature for the solo voice.
- MUHS4773 Survey of Vocal Literature II (Odd years, Sp)** A survey of concert literature for the solo voice. Prerequisite: MUHS 4763.
- MUHS4793 Band Literature (Even years, Sp, Su)** A study of literature written for performance by concert band, symphonic band, and wind ensemble, representative of the following five periods in Music History: Renaissance (1420-1600), Baroque (1600-1750), Classical (1750-1820), Romantic (1820-1900), and Contemporary (1900-present).
- MUHS4803 Survey of Keyboard Literature I (Odd years, Fa)** A survey of the piano works of outstanding composers. Prerequisite: MUAP 110V.
- MUHS4813 Survey of Keyboard Literature II (Even years, Sp)** A survey of the piano works of outstanding composers. Prerequisite: MUHS 4803.
- MUHS489V Seminar in Music History (Irregular) (1-4)** Subject matter not covered in other courses. With permission, may be repeated for credit if topics are different.
- MUHS4963H Honors Seminar in Performing Practice (Irregular)** Study of problems of performing in their historical context including media of performance; relation of notation to performance; rhythm; tempo; ornamentation; realization of improvised parts; dynamics and expression; and changing styles in music performance. Open to graduate students and to undergraduates in honors or consent of the instructor.
- MUHS498V Senior Thesis (Sp, Su, Fa) (1-6)**
- MUHS5722 Directed Studies in Music Literature I (Sp, Su, Fa)** Research in music literature in the performance field of the individual student.
- MUHS5732 Directed Studies in Music Literature II (Sp, Su, Fa)** Research in music literature in the performance field of the individual student. Prerequisite: MUHS 5722.
- MUHS5753 Seminar in Medieval & Early Renaissance (Irregular)** Intensive studies in music of Western Europe from early Christian times through the 15th century.
- MUHS5773 Seminar in Music of the 18th Century (Irregular)** Intensive studies of late Baroque and Classical music.
- MUHS5783 Seminar in Music of the 19th Century (Odd years, Sp, Su)** Intensive studies in music of the 19th century.
- MUHS5793 Seminar in Music of the 20th Century (Even years, Fa)** Intensive studies in 20th century music.
- MUHS5903 Seminar in Musicology (Irregular)** Current

problems, techniques, and approaches to the practice of musicology, including notation and editing problems.

- MUHS5943 Seminar in Opera (Irregular)** Intensive studies in operatic literature.
- MUHS5952 Choral History and Literature I (Odd years, Fa)** Detailed study of choral history and literature from Gregorian chant to J.S. Bach.
- MUHS5962 Choral History and Literature II (Even years, Sp)** Detailed study of choral history and literature from J.S. Bach to the present.
- MUHS5973 Seminar in Bibliography and Methods of Research (Fa)** A survey of the methods and materials of musical research, including bibliography, methods of analysis, and style in the presentation of research results. Open to graduate students and to juniors in Honors.
- MUHS600V Master's Thesis (Sp, Su, Fa) (1-6)**
- MUHS601V Lecture-Recital (Irregular) (1-6)** The production and presentation (under the direction of the teacher(s) of historic instruments involved and other members of a graduate committee) of a performance (45 minutes minimum playing time) displaying historic practices of performance with lecture. The candidate will be responsible for making an archival tape of the performance available to the library, with 2 copies of a transcript of the lecture in thesis form to be retained by the University library.

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**Music Pedagogy (MUPD)**

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- MUPD3801 Conducting I (Fa)** A study of the elementary techniques of conducting instrumental and choral groups. Prerequisite: MUTH 2603.
- MUPD3811 Conducting II: Instrumental Music (Sp)** Continuation of study of the technique of conducting instrumental music groups. Prerequisite: MUPD 3801.
- MUPD3861 Conducting II: Vocal Music (Sp)** Continuation of study of conducting with emphasis on techniques of choral conducting. Prerequisite: MUPD 3801.
- MUPD3871 Reed-Making (Fa)** The making of reeds for oboe, bassoon, or clarinet, including the processing of cane from tubes. May be repeated for up to 2 hours of degree credit.
- MUPD477V Special Topics in Pedagogy (Irregular) (1-6)** Subject matter not covered in other sources. With permission, may be repeated for credit if topics are different.
- MUPD481V Conducting (Sp, Su, Fa) (1-4)** Private lessons of 1/2 hour, and one hour conducting laboratory each week. Development of skills in conducting symphony, opera, oratorio, ballet and band repertoire.
- MUPD4863 Piano Pedagogy (Irregular)** Analytical study and discussion of the various approaches to piano pedagogy and its application in individual/class instruction. Involves demonstration of principles through actual teaching of beginning, intermediate and upper level students.
- MUPD499V Special Workshop in Music (Sp, Su, Fa) (1-2)** Presented by visiting master artist-teachers in various fields of music performance, teaching and composition. For this level it is expected that the prospective students are professionals in the given field seeking additional knowledge and insights from acknowledged professionals. May be repeated for up to 2 hours of degree credit.
- MUPD5202 Voice Pedagogy I (Irregular)** Graduate-level study of the techniques and materials of teaching voice.
- MUPD582V Conducting (Sp, Su, Fa) (1-2)** Private lessons of 1/2 hour and 1 hour conducting laboratory each week. Development of skills in conducting symphony, choral, opera, oratorio, ballet, and band repertoire. May be repeated for up to 18 hours of degree credit.
- MUPD584V Opera Workshop Techniques (Sp, Su, Fa) (1-2)** A basic course in every phase of opera production, including staging, set design, music coaching, voice casting, and translation.
- MUPD586V Woodwind Techniques (Sp, Su, Fa) (1-2)** A continuation of the undergraduate courses in techniques and materials for elementary and secondary school music teaching. Prerequisite: One year of similar class instruction in the field on the undergraduate level.
- MUPD587V Brass Techniques (Su) (1-2)** A continuation of the undergraduate class brass instrument course. Emphasis is placed on teaching methods, techniques, concepts, and materials. Prerequisite: One year of similar class instruction in the field on the undergraduate level.
- MUPD599V Special Workshop in Music (Sp, Su, Fa) (1-6)** Presented by visiting master artist-teacher in various fields of music performance, teaching and composition. Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

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**Music (MUSC)**

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- MUSC3923H Honors Colloquium in Music (Irregular)** Covers a special topic or issue offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in Music). May be repeated for up to 9 hours of degree credit.

**MUSC490VH Honors Essay (Irregular) (1-6)** An honors research paper in Music History or literature, Ethnomusicology, Music Theory, or Music Education. Open to seniors in honors.

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### Ethnomusicology (MUSY)

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**MUSY4113 Pro-Seminar: Ethnomusicology (Irregular)** An introduction to ethnomusicological study, with readings and discussion of seminal writings in the field and practical experience in ethnomusicological analysis and description. (Same as MUSY 5113) May be repeated for up to 6 hours of degree credit.

**MUSY4113H Pro-Seminar: Honors Ethnomusicology (Irregular)** An introduction to ethnomusicological study, with readings and discussion of seminal writings in the field and practical experience in ethnomusicological analysis and description. (Same as MUSY 5113) May be repeated for up to 6 hours of degree credit.

**MUSY4313H Honors Special Topics in Asian and Middle Eastern Musics (Irregular)** Research seminars on selected topics in Asian and Middle Eastern Musics.

**MUSY477V Independent Research in Ethnomusicology (Irregular) (1-4)** Subject matter not covered in other courses. In-depth study of specialized topics in contemporary, historical, or systematic ethnomusicology, and practical instruction in essay-structuring and presentation. May be repeated for up to 4 hours of degree credit.

**MUSY477VH Honors Independent Research in Ethnomusicology (Irregular) (1-4)** Subject matter not covered in other courses. In depth study of specialized topics in contemporary, historical, or systematic ethnomusicology, and practical instruction in essay-structuring and presentation. May be repeated for up to 4 hours of degree credit.

**MUSY5113 Proseminar: Ethnomusicology (Irregular)** An introduction to ethnomusicological study, with readings and discussion of seminal writings in the field and practical experience in ethnomusicological analysis and description. (Same as MUSY 4113) May be repeated for up to 6 hours of degree credit.

**MUSY5123 Proseminar: Musical Notations, Transnotation and Analysis (Even years, Sp)** Principles and practices for the study and musical analysis of gestural and oral "notations", as well as standard notation, for music and dance.

**MUSY5213 Proseminar: Historical Ethnomusicology (Even years, Fa)** An introduction to historical ethnomusicological study with readings and discussion of seminal writings in the field.

**MUSY5223 Seminar: Latin American Music (Even years, Sp)** A study of the process and result of musical hybridization in South America and the Caribbean, from European colonization to the present.

**MUSY5313 Proseminar: Topics in Asian and Middle Eastern Musics (Sp)** Research seminars on selected topics, such as The Performing Arts in East Asia; and Music and Ritual. May be repeated for up to 6 hours of degree credit.

**MUSY5323 Seminar: Topics in Asian and Middle Eastern Poetry and Music (Irregular)** Reading seminars on selected topics, such as Poetry and Music in Persian, Arabic and Turkish Cultures of the Islamic World; and Poetry and Song in Early East Asia. May be repeated for up to 6 hours of degree credit.

**MUSY5343 Seminar: Special Topics in Traditional Musics and Dance of Europe and the Americas (Irregular)** Topics not covered in MUSY 5223 and MUSY 5423, including, but not limited to: European Folk Music; the musical or scholarly legacy of a particular figure.

**MUSY5353 Seminar: Topics in Systematic Musicology (Irregular)** Seminars on selected topics such as Musical and A-musical Grammars (requires experience in functional programming languages); and Modes, Melodies, Instruments, and Singers. May be repeated for up to 6 hours of degree credit.

**MUSY5363 Proseminar: Music Cognition (Irregular)** An exploration of recent literature concerning the mental mechanisms that underlie our ability to perceive, understand, produce, perform, and enjoy music. Introductory in nature, with readings drawn from the fields of psychology, philosophy, musicology, computer science, and neuroscience.

**MUSY5371 Early Asian Music Performance Workshop (Irregular)** Approaches to performing early Asian musics. Links with Summer School, the Ancient Asian Music Consort, and/or an Artist in Residence. May be repeated for up to 2 hours of degree credit.

**MUSY5383 Ethnomusicology Summer Fieldwork (Irregular)** A minimum of 6 weeks summer fieldwork related to the topic of the student's thesis, resulting in an extensive fieldwork report and the submission of collected material, to be deposited in the University Library. Prerequisite: MUSY 5113.

**MUSY5391 Ethnomusicology Performance Studies (Irregular)** Applied vocal or instrumental studies relating to the performance activities of the International Center for Research in Early Asian and Middle Eastern Musics. (Private study, as available)

May be repeated for up to 2 hours of degree credit.

**MUSY5413 Proseminar: Cross-cultural Performance Practices (Irregular)** A survey of performance practices from historic western art music through modern non-western music. An introductory course with readings from seventeenth- and eighteenth-century performance treatises as well as a study of written and aural traditions of non-western music.

**MUSY5423 Seminar: History of Jazz (Fa)** A study of the musical and cultural cross-fertilization which produced this influential twentieth-century art form, as well as a general examination of its major practitioners.

**MUSY600V Ethnomusicology Thesis (Sp, Su, Fa) (1-6)** Thesis requirement for the Master of Arts in Ethnomusicology program. May be repeated for up to 6 hours of degree credit.

**MUSY6313 Internship in Asian and Middle Eastern Music (Irregular)** Internship in Asian and Middle Eastern Music Preservation in the Asian and Mid-Eastern International Music Preservation Collection, Music Division of the Library of Congress. Prerequisite: MUHS 5973 and (MUSY 5123 or MUSY 5353).

**MUSY6333 Advanced Studies in Ethnomusicology (Irregular)** Advanced level studies, individually tailored and supervised, including Ethnomusicology (prerequisite MUSY 5113 or MUSY 5213); The Music or Dance of a Selected Area (prerequisite at least one of MUSY 5313, MUSY 5323, MUSY 5423, MUSY 5223, MUSY 5343, or HUMM 4243); Historic Performance Practices (prerequisite MUSY 5413); Historical East Asian Musicology (prerequisite MUSY 5313 or MUSY 5323); and Historical Central Asian or Middle- and Near-Eastern Musicology (prerequisite MUSY 5313 or MUSY 5323).

**MUSY6363 Advanced Studies in Computer-Aided Asian Musicology (Irregular)** Building a computational toolbox for research in early Asian musics. Prerequisite: MUSY 5353.

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### Music Theory (MUTH)

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**MUTH1003 Basic Musicianship (Su)** Introductory-level studies in music theory and aural perception for students not prepared for MUTH 1603 or MUTH 1621. Meets 4 days per week.

**MUTH1603 Music Theory I (Sp)** A study of diatonic harmonic practice. Includes part-writing and analysis. Prerequisite: MUTH 1003 or permission of instructor.

**MUTH1621 Aural Perception I (Sp)** Development of aural perception through ear training, sight singing, and keyboard harmony. Meets 2 hours per week.

**MUTH1631 Aural Perception II (Sp)** Continued development of aural perception through ear training, sight singing, and keyboard harmony. Meets 2 hours per week. Prerequisite: MUTH 1621.

**MUTH164V Composition (Sp, Su, Fa) (1-4)** Private lessons of one-half hour, and one hour of composition laboratory session each week. Development of skills in creative musical expression specifically for composition-theory majors - others admitted by consent. May be repeated. Prerequisite: instructor consent.

**MUTH2603 Music Theory II (Fa)** A continuation of MUTH 1603. Also includes chromatic harmony. Prerequisite: MUTH 1603.

**MUTH2621 Aural Perception III (Sp)** A continuation of MUTH 1631. Two hours per week, one hour credit. Prerequisite: MUTH 1631.

**MUTH2631 Aural Perception IV (Fa)** A continuation of MUTH 2621. Two hours per week, one hour credit. Prerequisite: MUTH 2621.

**MUTH3603 18th Century Counterpoint (Sp)** A study of 18th century counterpoint. Writing and analysis of inventions, canons, fugues, etc. Three hours per week. Prerequisite: MUTH 2603.

**MUTH3613 Music Theory IV (Fa)** A study of the harmonic and melodic trends of the 20th century. Three hours per week. Prerequisite: MUTH 2603.

**MUTH364V Composition II (Sp, Su, Fa) (1-4)** Private lessons of one-half hour, and one hour of composition laboratory session each week. Development of skills in creative musical expression specifically for composition-theory majors - others admitted by consent. May be repeated. Prerequisite: MUTH 164V.

**MUTH364VH Honors Composition II (Sp, Su, Fa) (1-4)** Private lessons of one-half hour, and one hour of composition laboratory session each week. Development of skills in creative musical expression specifically for composition-theory majors - others admitted by consent. May be repeated.

**MUTH4322 Score Reading (Irregular)** A conductor's approach to the technique of score reading and analysis of orchestra, band, and choral scores for the purpose of preparing composition for rehearsal and performance.

**MUTH4612 Orchestration (Sp)** A continuation of study of the capabilities of the various orchestral and band instruments and their use in arrangement for ensembles, band, and orchestra. Scoring for orchestra. Prerequisite: MUTH 3613.

**MUTH462V Music Theory Review (Su, Fa) (1-3)** A continuation and intensification of undergraduate music theory. (May not count for credit toward the Master of Music degree.)

**MUTH4703 Writing Music Analysis (Sp)** Analysis of music with an emphasis on analytical writing skills and the use of library source materials. May be repeated for up to 6 hours of degree credit.

**MUTH477V Special Topics in Music Theory (Irregular) (1-4)** Subject matter not covered in other courses. May be repeated for up to 4 hours of degree credit.

**MUTH477VH Honors Special Topics in Music Theory (Irregular) (1-4)** Subject matter not covered in other courses. May be repeated for up to 4 hours of degree credit.

**MUTH4923H Honors Colloquium in Music Theory (Irregular)** Covers a special topic or issue, offered as part of the honors program.

**MUTH498V Senior Thesis (Sp, Su, Fa) (1-18)**

**MUTH5343 Analytical Techniques (Irregular)** An intensive study of selected works from music literature. Schenkerian analysis, rhythmic analysis, and set theory analytical techniques will be studied and employed in addition to traditional harmonic and formal analysis. Prerequisite: MUTH 3613 or equivalent and graduate standing.

**MUTH5623 Pedagogy of Theory (Irregular)** Detailed study of methods of teaching undergraduates courses in music theory and aural perception. Prerequisite: Graduate standing.

**MUTH5631 Music Theory Teaching Practicum (Irregular)** Supervised teaching of an undergraduate course in music theory or aural perception, including lesson plan and examination preparation and in-class observation.

**MUTH5643 Analysis of 20th Century Music (Irregular)** Study of 20th century music and analytic techniques including pitch class set theory and serial techniques. Prerequisite: Graduate standing.

**MUTH5662 Instrumental Arranging (Su)** A practical course in arranging for the various small ensembles including keyboard. Review of instrumental ranges and capabilities. Study of current trends in instrumental ranges and arranging.

**MUTH5672 Advanced Orchestration (Irregular)** A study of advanced principles of orchestral writing through individual projects in scoring and analysis. Prerequisite: MUTH 4612 or equivalent.

**MUTH568V Composition (Sp, Su, Fa) (1-4)** Private lessons of one-half hour, and one hour of composition laboratory session each week. Development of skills in creative musical expression specifically for composition-theory majors - others admitted by consent. May be repeated. Prerequisite: Graduate standing.

**MUTH599V Independent Study in Music Theory (Irregular) (1-6)** Provides students with an opportunity to pursue special study of topics in music theory. May be repeated for up to 12 hours of degree credit.

**MUTH600V Master's Thesis (Sp, Su, Fa) (1-6)**

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### Nursing (NURS)

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**NURS2012 Nursing Informatics (Sp, Su, Fa)** This course focuses on how information technology is used in the health care system. The course describes how nursing informatics is currently being used by healthcare professionals and speculates about future applications. Prerequisite: For pre-nursing and nursing majors only.

**NURS2022 Introduction to Professional Nursing Concepts (Sp, Su, Fa)** The course presents an overview of theories, principles and concepts essential to professional nursing practice. It includes ethical and legal implications relevant to health care systems. Focus is on the nursing process as the organizing framework for the delivery of care. It also explores the role of the professional nurse. This is a pre-nursing course. Prerequisites: For pre-nursing and nursing majors only. Sophomore status required.

**NURS2032 Therapeutic Communication (Sp, Su, Fa)** Focuses on intrapersonal and interpersonal strategies necessary for effective nurse-client interactions. Introduces a variety of communication techniques skills including group process and dynamics. This is a pre-nursing course. Prerequisite: For pre-nursing and nursing majors only with sophomore standing or above.

**NURS217V Independent Study in Nursing (Sp, Su, Fa) (1-2)** A selected learning experience in nursing to exchange knowledge about and/or practice in the profession. Objectives and experiences are designed on an individual basis with a faculty adviser.

**NURS217VH Honors Independent Study in Nursing (Sp, Fa) (1-2)** A selected learning experience in nursing to exchange knowledge about and/or practice in the profession. Objectives and experiences are designed on an individual basis with a faculty adviser.

**NURS3212 Nursing Concepts: Teaching and Health Promotion (Sp, Fa)** (Formerly NURS 3123) The course introduces principles of teaching/learning and the professional nurse's role in health promotion and disease prevention. The concept of health is explored throughout the lifespan in the context of spirituality, culture, relationships, nutrition, environment, exercise, and lifestyle behaviors. A variety of health education strategies are presented and evaluated. This is a Level I course. Prerequisite: Admission into the BSN professional program of studies.

**NURS3313 Pharmacology in Nursing (Fa)** The use of therapeutic drugs in health care is the focus of the course. Nursing assessment, safety measures and client education related to drug therapy are emphasized. This is a Level I course. Prerequisite: Admission into the BSN professional program.

**NURS3314 Pathophysiology (Sp, Fa)** The course focuses on underlying concepts common to pathophysiological processes across the life span. Factors that contribute to altered physiological functioning and the body's adaptive and compensatory mechanisms are studied. Emphasizes concepts essential for understanding the rationale for preventive and therapeutic nursing interventions in health and illness. This is a Level I course. Prerequisite: Admission into BSN professional program

**NURS3314H Honors Pathophysiology (Sp, Fa)** The course focuses on underlying concepts common to pathophysiological processes across the life span. Factors that contribute to altered physiological functioning and the body's adaptive and compensatory mechanisms are studied. Emphasizes understanding the rationale for preventive and therapeutic nursing interventions in health and illness. This is a Level I course. Prerequisite: admission into BSN professional program.

**NURS3321L Health Assessment (Fa)** The course focuses on assessment of client's health status, environment, nursing care needs, and referral needs. The course presents concepts and skills necessary to perform a holistic health assessment of the adult client. This is a Level I course. Prerequisite: Admission to the BSN professional program.

**NURS3422 Nursing Concepts: Foundations of Professional Practice (Fa)** Introduction to the nursing process and the scope of basic human needs. The student learns to use nursing diagnoses and care plans in case studies. This is a Level I course. Corequisite: NURS 3423. Prerequisite: Admission to BSN professional program.

**NURS3424 Professional Role Implementation I: Caregiver (Sp)** Students apply basic nursing concepts and skills in laboratory and clinical settings. Emphasis is on the caregiver role and use of the nursing process. This is a Level I course. Prerequisite: Admission to the BSN program. Corequisite: NURS 3422 and NURS 3321L and NURS 3313

**NURS3634 Nursing Concepts: Adult Health and Illness (Sp, Fa)** Focuses on health altered physiologic functioning in adults experiencing acute and chronic problems. Emphasis placed on pathophysiological concepts essential for understanding the rationale for therapeutic nursing interventions in illness. The nursing process is used to assist adults meet health needs in structured settings. This is a Level II course. Corequisite: NURS 3643. Prerequisite: Completion of Level I courses.

**NURS3643 Professional Role Implementation II: Caregiver (Sp, Fa)** Emphasizes the role of caregiver in acute care settings. Course expands on assessment and clinical skills learned in previous courses. Emphasizes the use of clinical judgment to promote optimal health among adults experiencing illness and/or undergoing surgery. This is a Level II course. Pre- or Corequisite: NURS 3841L. Prerequisite: Completion of Level I courses.

**NURS3742 Nursing Concepts: Mental Health and Illness (Sp, Fa)** Presents the basic concepts and theories of mental health and illness. Examines various therapeutic modalities in the care of clients experiencing mental health or psychosocial disorders. This is a Level II course. Corequisite: NURS 3752. Prerequisite: Completion of Level I courses.

**NURS3752 Professional Role Implementation III: Caregiver (Sp, Fa)** Students work with clients who have mental health problems, observe group process in therapy sessions, and develop interpersonal communication skills. Students apply research-based knowledge in assisting assigned clients meet mental and other health care needs. This is a Level II course. Corequisite: NURS 3742. Prerequisite: Completion of Level I courses.

**NURS3841L Professional Nursing Skills: Advanced (Sp, Fa)** Introduction to advanced nursing skills. Students will apply advanced skills in laboratory and clinical settings. This is a Level II course. Prerequisite: Completion of Level I courses.

**NURS3842 Research in Nursing (Sp, Fa)** Introduction to the research process through a comparative analysis of selected studies exemplifying various theoretical, methodological and analytical approaches. Students acquire the basic competencies to critically read, evaluate and interpret nursing research studies for use in professional nursing practice. This is a Level II course.

**NURS4154 Nursing Concepts: Children and Family (Sp, Fa)** This course provides theory and research-based knowledge regarding holistic nursing care of children and families. Principles of health promotion and health education for expanding families are integral to this course. This is a Level II course. Corequisite: NURS 4164. Prerequisite: Completion of Level I courses.

**NURS4164 Professional Role Implementation IV: Teacher (Sp, Fa)** Clinical and laboratory experience for application of research-based knowledge and skills in the nursing care of children

and families. Emphasis is on teaching role of the nurse. This is a Level II course. Pre- or Corequisite: NURS 3841L. Co-requisite: NURS 4154. Prerequisite: Completion of Level I courses.

**NURS4242 Management in Nursing (Sp, Fa)** Introduces principles of management and the professional nurse's roles in the health care system. Considers the perspectives of management, organization, and change theory. Includes strategies for monitoring delivery of care, outcomes and evaluating program effectiveness. This is a Level II course.

**NURS4263 Nursing Concepts: Older Adult Health and Illness (Sp, Fa)** This course focuses on gerontologic theories, concepts, and principles as they relate to nursing care of older adults. Students explore socio-cultural context of gerontologic nursing, professional standards of practice, common health concerns, and future considerations. This is a Level II course. Corequisite: NURS 4273. Prerequisite: Completion of Level I courses.

**NURS4273 Professional Role Implementation V: Manager (Sp, Fa)** Students will apply the theoretical principles learned in NURS 4263 to the delivery of care to older adults in a variety of settings. The manager will be emphasized. This is a Level II course. Pre- or Corequisite: NURS 4242 and NURS 3841L. Prerequisite: Completion of Level I courses.

**NURS4443 Nursing Concepts: Critical Care (Sp, Fa)** This course focuses on alterations in biopsychosocial function that necessitate admission to a critical care unit. A nursing framework is used to emphasize the nurse's role in clinical assessment, diagnosis, therapeutic management, and outcome evaluation. Nurse caregiver, teacher, and manager roles are synthesized. This is a Level III course. Corequisite: NURS 4453. Prerequisite: Completion of Level I and II courses.

**NURS4453 Professional Role Implementation VI: Role Synthesis (Fa, Sp)** Focuses on role synthesis and research-based nursing practice to provide nursing care to critically ill clients. Students develop nursing skills and clinical judgment to assess, plan, implement and evaluate nursing care of critically ill clients. This is a Level III course. Corequisite: NURS 4443. Prerequisite: Completion of Level I and II courses.

**NURS4603 Nursing Concepts: Community (Sp, Fa)** The course focuses on theories and concepts in community health nursing. Epidemiology, community assessment, systems of health care delivery, education, school health, public health, home health, industrial health, and health resources are explored in a community health context. This is a Level III course. Corequisite: NURS 4613. Prerequisite: Completion of Level I and II courses.

**NURS4613 Professional Role Implementation VII: Role Synthesis (Fa, Sp)** Application of community health concepts and the nursing process to promote community health and to restore health in a variety of primary care settings. This is a Level III course. Corequisite: NURS 4603. Prerequisite: Completion of Level I and II courses.

**NURS4712 Seminar in Nursing (Sp, Fa)** Focuses on integrating the nursing caregiver, teacher and manager roles. Prepares students to analyze practice issues, trends and future demands. Explores the roles of baccalaureate prepared professional nurses and facilitates students to incorporate those roles as they enter professional practice. This is a Level III course. Prerequisite: Completion of Level I and II courses.

**NURS481V Honors Special Topics in Nursing (Irregular) (1-6)** This course is the study of a special topic(s) in nursing. Content varies. May be repeated for up to 6 hours of degree credit.

**NURS481V Special Topics in Nursing (Irregular) (1-6)** This course is the study of a special topic(s) in nursing. Content varies. May be repeated for up to 6 hours of degree credit.

**NURS481VH Honors Special Topics in Nursing (Irregular) (1-6)** This course is the study of a special topic(s) in nursing. Content varies. May be repeated for up to 6 hours of degree credit.

**NURS491V Independent Study in Nursing (Sp, Su, Fa) (1-6)** A selected learning experience in nursing to enhance knowledge and/or practice of the profession. Objectives and experiences are designed on an individual basis with a faculty adviser. May be taken with any 3500-level nursing course or above.

**NURS491VH Honors Independent Study in Nursing (Sp, Su, Fa) (1-6)** A selected learning experience in nursing to enhance knowledge and/or practice of the profession. Objectives and experiences are designed on an individual basis with a faculty adviser. May be taken with any 3500-level nursing course or above.

**NURS5003 Theoretical Foundations in Nursing (Fa)** The course utilizes the critical reasoning process to examine the element of nursing knowledge. Emphasis is placed on concept analysis and the evaluation of nursing theories. Identification of the links between theory and empirical indicators is examined. The clinical relevance of mid-range and practice theories is explored.

**NURS5013 Advanced Nursing Research I (Sp)** This course focuses on scientific approaches to evidence-based practice, research utilization, and outcomes evaluation for clinical practice.

**NURS5023 Advanced Nursing Research II (Su)** This course

builds on the content of Advanced Nursing Research I. The focus of this course is to prepare the student to design a systematic investigation of a clinical problem including identifying the impact on clinical, practice, and organization outcomes. Prerequisite: NURS 5013.

**NURS5033 Role Development of the Advanced Practice Clinical Nurse Specialist (Even years, Sp)** The study of role development of the Advanced Practice Nurse with specific emphasis on the role of the Clinical Nurse Specialist (CNS). Concepts include role development, interdisciplinary communication and collaborative strategies, patient advocacy and serving as change agent for role implementation. Pre- or Corequisite: NURS 5003.

**NURS5042 Advanced Concepts in Health Promotion with Diverse Populations (Odd years, Fa)** Provides a theoretical basis for health promotion, risk reduction and disease prevention at the individual, family and community levels. A cross-disciplinary approach to achieve or preserve health is identified. Focuses on holistic plans and interventions that address the behavioral and social factors that contribute to morbidity and mortality in diverse populations.

**NURS5102 Advanced Health Assessment (Even years, Sp)** Application of advanced health assessment techniques with adults within the context of the family and community. Differentiate abnormal from normal findings, interpret diagnostic tests, and use clinical reasoning to formulate diagnoses for culturally diverse individuals. Emphasis on health promotion and disease prevention. Corequisite: NURS 5111.

**NURS5111 Clinical Practicum: Advanced Health Assessment (Even years, Sp)** Clinical practicum companion course for NURS 5102: Advanced Health Assessment. Opportunities to conduct health assessments on a variety of clients. Corequisite: NURS 5102.

**NURS5123 Advanced Pharmacology (Even years, Su)** Advanced concepts and application of pharmacotherapeutic and pharmacokinetics of broad categories of agents used for disease management of individuals. Provides the student with the knowledge and skills to manage (including the prescription of pharmacologic agents) a client's common health problems in a safe, high quality, cost-effective manner.

**NURS5141 Clinical Practicum: Advanced Concepts in Health Promotion with Diverse Populations (Odd years, Fa)** Clinical practicum companion course for NURS 5042. Provides opportunity to develop, implement, and evaluate health promotion interventions for selected clients. Corequisite: NURS 5042.

**NURS5143 Advanced Pathophysiology (Odd years, Fa)** This course is designed for nurses experienced in the management of pathophysiological disorders. It includes mechanisms of disease, the immune response and selected system based disorders.

**NURS5212 Advanced Medical-Surgical Nursing I (Even years, Fa)** Focuses on utilization of advanced theories, concepts, knowledge and skill in the care of diverse adult populations with complex acute health problems. Prerequisite: All core courses.

**NURS5225 Clinical Practicum: Advanced Medical-Surgical Nursing I (Even years, Fa)** Clinical practicum for NURS 5212. Application of advanced theories, concepts, knowledge and skill in the care of diverse adult populations with complex acute health problems. Corequisite: NURS 5212. Prerequisite: All core courses.

**NURS5232 Advanced Medical-Surgical Nursing II (Even years, Fa)** Focuses on utilization of advanced theories, concepts, knowledge and skill in the care of diverse adult populations with complex chronic health problems. Corequisite: NURS 5245. Prerequisite: all core courses.

**NURS5245 Clinical Practicum: Advanced Medical-Surgical Nursing II (Even years, Fa)** Clinical practicum for NURS 5232. Application of advanced theories, concepts, knowledge and skill in the care of adults with chronic health problems. Corequisite: NURS 5232. Prerequisite: all core courses.

**NURS5303 Foundations of Nursing Education (Odd years, Fa)** Considers the principles, philosophies, theories, and strategies of teaching, learning, and evaluation needed in nursing education.

**NURS5313 Curriculum and Evaluation in Nursing Education (Even years, Sp, Su)** Considers knowledge and skills needed for curriculum and program development and evaluation for a variety of nursing education settings.

**NURS5323 Teaching in Nursing Practicum (Even years, Sp)** Supervised experience in the nurse educator role in both classroom and clinical settings.

**NURS579V Independent Study (Sp, Su, Fa) (1-3)** Independent study designed by student with faculty advisor. May be completed as alternative to thesis.

**NURS589V Workshop (Irregular) (1-3)** Practice-based topics for the advanced practice nurse.

**NURS599V Seminar (Irregular) (1-3)** Selected topics in nursing explored in discussion format.

**NURS600V Master's Thesis (Sp, Su, Fa) (1-3)** Student research to fulfill degree requirement for the MSN. Prerequisite: NURS 5013 and NURS 5023.

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**Operations Management (OMGT)**


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**OMGT4303 Industrial Safety Administration (Irregular)** Principles of accident and industrial disease prevention; organization and operation of industrial safety and hygiene programs; conformance with federal occupational safety and health regulations.

**OMGT4313 Law and Ethics (Sp, Su, Fa)** Analysis of the fundamental legal principles applicable in protecting the rights and interests of individuals and organizations; court systems and litigation processes; constitutional law and legislation, formation and discharge of contracts; agency relationships; torts; labor laws; patents; trademarks; copyrights; unfair competition; ethics; professional relations. Not for graduate credit.

**OMGT4323 Industrial Cost Analysis (Sp, Su, Fa)** Use of accounting information for planning and control from a management viewpoint; principles of cost accounting and other aspects of production costs; budgeting, depreciation, taxes, distribution of profits, securities, sources of corporate capital, and interpretation of financial statements. Not for graduate credit.

**OMGT4333 Applied Statistics (Sp, Su, Fa)** Fundamentals of probability and distribution theory with applications in managerial decision making. Descriptive methods, probability distributions, sampling distributions and hypothesis testing are included. Not for graduate credit.

**OMGT4553 Production Planning and Control (Irregular)** Operational problems of production systems including control of purchased materials inventory; scheduling of a job shop, batch, and continuous production process for single and multi-item product lines; planning of work force and inventory under seasonal and stochastic demand.

**OMGT4583 Operations Productivity and Automation (Irregular)** An examination of methods to improve industrial productivity including quality circles, robots, machine vision, programmable controllers, computer numerical control, and computer-assisted manufacturing.

**OMGT4613 Production and Inventory Control (Irregular)** Operational problems of production systems including control of purchased materials; scheduling of job shop, batch, and continuous production processes; planning of work force and production under seasonal demand. Inventory models and strategies are compared. Prerequisite: OMGT 4333.

**OMGT4623 Strategic Management (Irregular)** Case studies covering the spectrum of strategic management issues facing typical organizations. Designed to provide analysis and synthesis experience to apply principles of operations management. Should be taken in last half of degree program. Required course (may be substituted by OMGT 5873).

**OMGT4783 Project Management for Operations Managers (Irregular)** Introduction to the Critical Path Method and Program Evaluation and Review Technique. Project planning and control methods; activity sequencing; time-cost trade-offs; allocation of manpower and equipment resources; scheduling activities; computer systems for PERT/CPM. Required course.

**OMGT4853 Data Processing Systems (Irregular)** Fundamentals of computers and data processing. Computer hardware and software. Word processing and spreadsheet methods and applications. Introduction to database concepts and applications.

**OMGT4873 Principles of Operations Research (Irregular)** Surveys the mathematical models used to design and analyze operational systems. Contents include linear programming models, waiting line models, and management science. Applications of operations research are emphasized. Prerequisite: OMGT 4333.

**OMGT5003 Introduction to Operations Management (Sp, Su, Fa)** An overview of the functional areas of Operations Management. Topics covered include: Productivity; strategy in a global business environment; project management; quality management for goods and services; location and layout strategies; supply chain and inventory management; material requirements planning; JIT; maintenance and reliability; as well as other subjects relevant to the field. Required course.

**OMGT5013 Supply Chain Management for Operations Managers (Irregular)** This course focuses on the planning, organizing, controlling and management of supply chain activities, including transportation, inventory maintenance, order processing, purchasing, warehousing, materials handling, customer service standards, and production. Emphasizes synthesis of the concepts, principles, and methods prevalent in marketing, production, accounting, purchasing, transportation, and multi-firm logistics planning for operations managers.

**OMGT5113 Human Resource Management (Irregular)** Human resource policies and practices are examined including legal foundations, classification and compensation plans, recruitment and selection processes, training, employment policies and morale, compensation, employee relations, and organization.

**OMGT5123 Finance for Operations Managers (Irregular)** The scope and environment of finance for operations managers,

including financial markets, interest rates, financial statements, cash flows, and performance evaluation; valuation of financial assets using time value of money and meaning and measurement of risk and return; capital-budgeting, cost of capital, capital structure, and dividend policy. Required course (OMGT 5463 may be substituted).

**OMGT5133 Operations Management in the Service Sector (Irregular)** Review of the role of the operations management in the service sector, e.g., health care systems, banking, municipal services, utilities, and postal service and others. Emphasizes the principles and methodologies applicable to the solution of problems within the service industries. Prerequisite: Graduate standing.

**OMGT5143 Contemporary Issues in Human Resource Management (Irregular)** The class explores the concept of Strategic Human Resource Management with emphasis on how the various Human Resources functions (Compensation, Benefits, ER, Training & Development, etc.) can effectively partner with top management to support the large-scale, long-range goals of achieving success in the organization's chosen markets. Students will build on basic concepts acquired in OMGT 5113 Human Resource Management and apply these to selected case studies. Prerequisite: OMGT 5113 or consent.

**OMGT5223 Safety and Health Standards Research (Irregular)** For graduate students who seek Certified Professional or Certified Industrial Hygienist status, or both. Includes review and development of computer databases for standards, interpretations, court decisions, and field memoranda. Test equipment and procedures for determining indoor industrial air contamination PEL concentrations and industrial environment noise levels are examined. Prerequisite: INEG 4223 or OMGT 4303. (Same as INEG 5223)

**OMGT5303 Health Care Policies and Issues (Irregular)** Health care management and policy development. Health insurance, Medicare and managed care. Health benefits for employees. The role of government and business in policy formulation. Financing of health care. Legal and ethical considerations in health care. Hospital and outpatient management issues.

**OMGT5373 Quality Management (Irregular)** Implementation of modern participative quality management techniques in military and civilian operations. Includes quality control methods and control charts. Acceptance sampling plans with emphasis upon Department of Defense procurement standards. Prerequisite: OMGT 4333.

**OMGT5423 Operations Management & Global Competition (Sp)** Studies of principles and cases in business/industrial administration in global competition. Survey of markets, technologies, multi-national corporations, cultures, and customs. Discussion of ethics, professionalism, difference valuing, human relations skills, and other topics relevant to global engineering practice. Prerequisite: INEG 4433.

**OMGT5433 Cost Estimation Models (Irregular)** An examination of the methodologies for estimating and forecasting manufacturing costs. Types of cost recovery systems, work progress functions, product improvement curves, determination of hourly rates, parametric estimating systems, and the development of software for computer-assisted estimating systems. Prerequisite: INEG 3513 and INEG 3833. (Same as INEG 5433)

**OMGT5463 Economic Decision Making (Irregular)** Principles of economic analysis with emphasis upon discounted cash flow criteria for decision making. Comparison of criteria such as rate of return, annual cost, and present worth for the evaluation of project alternatives. Required course (may be substituted by OMGT 5123).

**OMGT5503 Maintenance Management (Irregular)** Principles and practices of maintenance department organization, prevention procedures, and typical equipment problems. Includes related topics such as plant protection, preventative and plant maintenance. Prerequisite: OMGT 4333.

**OMGT5733 Human Behavior Analysis (Irregular)** Psychological and physiological factors to be considered by the operations manager. Human perceptual and work capacities are examined in relation to various task situations, with emphasis on controlling and monitoring tasks. Fundamental design factors are also considered. Human behavioral aspects of management decisions are considered.

**OMGT5777 Special Problems (Irregular) (1-3)** Application of previous course work knowledge to problems encountered in military base and civilian operations. Problems are proposed by students according to individual interests and needs. May be repeated for up to 3 hours of degree credit.

**OMGT5823 Computer Applications (Irregular)** Computer systems for analysis and control of operations management problems. Coding of operations models and currently available software systems. Microcomputers, minicomputers, and time-sharing systems. Networking and navigating the Internet as a resource for solving operations management problems. Prerequisite: OMGT 4853.

**OMGT5873 Organization and Control (Irregular)** Examination of organizational decision making authority, structures, and controls. Functions of management-planning, organizing, staffing, directing, and controlling. Comparison of military and civilian environments for the implementation of management principles.

Required course (may be substituted by OMGT 4623).

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**OMGT600V Master's Thesis (Irregular) (1-6)**


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**Public Administration (PADM)**


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**PADM5803 Quantitative Methods Analysis (Fa)** Data analysis techniques, including descriptive and inferential statistics and packaged computer programs. Prerequisite: Graduate standing.

**PADM5813 Methods in Public Management Information (Sp)** Quantitative approaches toward an understanding of public administration and statistical tools for analysis of administrative problems and programs. Prerequisite: Graduate standing.

**PADM5823 Grantwriting for the Social Sciences (Irregular)** This course will teach students the fundamentals of obtaining grants from local, state and federal agencies.

**PADM584V Special Topics in Public Administration (Irregular) (1-3)** Topic varies. May be repeated for up to 6 hours of degree credit.

**PADM587V Professional Development (Sp, Su, Fa) (1-6)** Encompasses internships, professional projects if individual is employed full-time and not eligible for an internship, conference and workshop participation, and other activities conducive to the students development as a public service professional.

**PADM588V Directed Readings (Sp, Su, Fa) (1-3)** Prerequisite: Graduate standing.

**PADM589V Independent Research (Sp, Su, Fa) (1-3)** Prerequisite: Graduate standing.

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**Physical Education Activity (PEAC)**


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**PEAC1131 Beginning Swimming (Irregular)** Includes: essentials of water safety; basic strokes and techniques of swimming; and beginning diving.

**PEAC1221 Beginning Jogging (Sp, Fa)** Instruction and participation in jogging.

**PEAC1231 Beginning Bowling (Sp, Fa)** Instruction and participation in bowling.

**PEAC1241 Beginning Volleyball (Irregular)** Instruction and participation in volleyball.

**PEAC1251 Beginning Racquetball (Sp, Fa)** Instruction and participation in racquetball.

**PEAC1351 Beginning Golf (Sp, Fa)** Instruction and participation in golf.

**PEAC1391 Fitness Walking (Sp, Fa)** Instruction and participation in vigorous walking for cardiovascular development and improvement.

**PEAC1401 Beginning Gymnastics for Men's Apparatus (Irregular)** Instruction and participation in gymnastics and men's apparatus.

**PEAC1411 Beginning Gymnastics for Women's Apparatus (Irregular)** Instruction and participation in gymnastics with women's apparatus.

**PEAC1431 Beginning Tennis (Sp, Fa)** Instruction and participation in tennis.

**PEAC1471 Beginning Badminton (Fa)** Instruction and participation in badminton.

**PEAC1481 Beginning Archery (Irregular)** Instruction and participation in archery.

**PEAC1621 Fitness Concepts (Sp, Fa)** Acquaints students with a basic knowledge, understanding, and value of physical activity as related to optimal wellness.

**PEAC1661 Weight Training (Sp, Fa)** Instruction and participation in weight training.

**PEAC1801 Aerobic Dance I (Irregular)** The fundamentals of aerobic dance as a physical fitness program.

**PEAC1831 Beginning Scuba Diving (Sp, Fa)** Instruction and participation in scuba diving. Corequisite: Drill component.

**PEAC1901 Special Topics (Irregular)** Instruction and participation in specialized activity. May be repeated for up to 4 hours of degree credit.

**PEAC2241 Intermediate Volleyball (Irregular)** A continuation of the study and practice of volleyball fundamentals with emphasis on advanced skills and strategies. Prerequisite: PEAC 1241.

**PEAC2421 Intermediate Tumbling (Irregular)** The fundamentals of tumbling from basic rolls and balances to aerial movement and combinations. Prerequisite: PEAC 1401 and PEAC 1411.

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**Persian (PERS)**


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**PERS1016 Intensive Persian I (Irregular)** This course is designed for students of beginning Persian. The major objectives of the course are to develop listening, speaking, reading, and writing skills through the study of authentic aural, written, and visual texts and through in-class communicative activities; and to explore historical, literary, and artistic manifestations of Iranian culture.

**PERS2016 Intensive Persian II (Irregular)** This course is an intermediate course designed to increase reading efficiency through

scanning, skimming, taking notes, summarizing, and interpreting authentic texts. Grammar, syntax, and vocabulary building are also emphases of this course. Students should have completed six hours in elementary Persian or have equivalent exposure to the Persian language. Prerequisite: PERS 1016 or permission of instructor.

**Physical Education (PHED)**

**PHED1003 The Physical Education Profession: An Overview (Sp, Fa)** An introduction to the teaching of physical education. (Same as CATE 1001, CIED 1011)

**PHED2013 Teaching Progressions and Assessment of Basic Skills (Sp, Fa)** This course serves as an introduction to motor skill analysis. Emphasis is placed on teaching and task analysis of locomotor, non-locomotor, and manipulative skills.

**PHED2023 Teaching Progressions and Assessment of Advanced Skills (Sp, Fa)** This course is designed to teach the progression and analysis of motor and sport skills. Specific emphasis is on the commonalities of various motor skills that apply to various sport movements. Prerequisite: PHED 2013.

**PHED3001 Practicum I (Sp, Fa)** All 5-year teaching option majors serve as teaching assistants in 1 physical education or dance education class under an experienced teacher. Prerequisite: Junior standing.

**PHED3002 Teaching and Leading Outdoor Recreation and Experiential Activities (Sp, Fa)** This course is designed to provide opportunities for the student to acquire the skills, teaching and leadership techniques associated with outdoor recreational and experiential learning activities, including camping, orienteering, cooperative activities, and experiential learning activities. Includes a mandatory weekend trip. Corequisite: PHED 3032. Prerequisites: PHED 1003, PHED 2013 and junior standing.

**PHED3022 Teaching Stunts and Tumbling (Sp, Fa)** Instructional strategies for teaching public school students stunts and tumbling skills. Corequisite: PHED 3043 Prerequisite: PHED 1003 or KINS 1013 and PHED 2013 and junior standing.

**PHED3032 Teaching Rhythms (Sp, Fa)** Designed to teach P-12 Physical Education majors how to perform, teach, develop and implement rhythmic activity. Corequisite: PHED 2002. Prerequisite: PHED 1003 or KINS 1013 and PHED 2013 and junior standing.

**PHED3043 Teaching Fitness (Sp, Fa)** Instructional strategies for teaching public school students about fitness concepts. Corequisite: PHED 3022. Prerequisite: PHED 1003 or KINS 1013 and PHED 2013 and junior standing.

**PHED3074 Secondary Physical Education (Sp, Fa)** Physical education instructional strategies and curriculum for secondary school. Prerequisite: PHED 1003 or KINS 1013, PHED 2013 and PHED 2023. Corequisite: PHED 3702.

**PHED3203 Principles and Problems of Coaching (Su, Fa)** A focus on the various aspects of coaching the athletes in contemporary society through an examination of research findings related to factors affecting performance. Attention to be given to principles, problems and understanding essential to the management of athletic contests. Prerequisite: Junior standing.

**PHED3373 Elementary Physical Education (Sp, Su, Fa)** Program planning and techniques of teaching physical education activities to children; for early childhood, elementary and physical education teachers, supervisors, and principals. Prerequisite: Junior standing.

**PHED3702 Measurement Concepts In Kinesiology (Sp, Fa)** Measurement and assessment of physical education objectives. Corequisite: PHED 3074.

**PHED3903 Physical Education for Special Populations (Sp, Fa)** Provides fundamental concepts and skills essential to physical education programming for handicapped students. Deals with definitions, handicapping conditions, developmental and remedial activities, games, and sports. Prerequisite: Junior standing.

**PHED4001 Practicum II (Sp, Fa)** All 5-year teaching option majors serve as a coaching assistant at the K-12 level. Prerequisite: Senior standing and PHED 3203.

**PHED4023 Class Management (Sp, Fa)** This course is designed to provide opportunities for the student to acquire an understanding that emphasizes class management; and includes professional ethics, and school policies related to students, faculty, and programs. Corequisite: PHED 407V, PHED 4263, and PHED 4731.

**PHED407V Physical Education Teaching Internship (Sp, Fa) (1-9)** This internship involves supervised teaching experience in a P-12 setting. Students will be placed under the guidance of a mentor teacher at specific school sites within NW Arkansas. Internship will be done at both the elementary and secondary levels. Corequisites: PHED 4023, PHED 4263, PHED 4731. Prerequisites: Senior status in KINSBS P-12, PHED 3001, PHED 3002, PHED 3022, PHED 3032, PHED 3043, PHED 3074, and PHED 3702 Praxis I (all parts) passed, completed or registered for Praxis II content knowledge exam.

**PHED4263 Professional Issues in Physical Education (Sp,**

**Fa)** This course focuses on the contemporary issues surrounding effective teaching practices in physical education. Students gain experience critically reviewing issues relevant to the physical education teacher. Corequisite: PHED 407V, PHED 4023, and PHED 4731.

**PHED4731 Senior Seminar (Sp, Fa)** This capstone class will cover special topics for the Kinesiology P-12 students in preparation for entry into the profession. In addition to specific topics, students will prepare their final portfolio and make a formal presentation. Corequisites: PHED 407V, PHED 4023, and PHED 4263. Prerequisite: Senior status in KINSBS P-12 Teaching.

**PHED5023 Class Management (Fa)** Cohort 5th year course that emphasizes class management; includes professional ethics and school policies related to students, faculty and programs. A major part of course time will be field based.

**PHED5233 Research on Teaching in Physical Education (Fa)** A review of contemporary research literature informing effective teaching practices in physical education settings. Students gain experience in critically reviewing literature in physical education as well as related behavioral science, education, and humanities disciplines; emphasis is placed in incorporating research finding into personal teaching strategies.

**PHED5243 Sport Skill Assessment and Instructional Strategies (Su)** The focus of this course is practical assessment techniques and instructional strategies in the area of sport and physical education activities.

**PHED5253 The Physical Education Curriculum (Odd years, Fa)** Principles, problems, procedures, and the influence of educational philosophy on programs in physical education and their application in the construction of a course of study for a specific situation.

**PHED5273 Professional Issues in Physical Education and Sport (Odd years, Fa)** A review of contemporary research literature informing effective teaching practices in physical education settings. Students gain experience in critically reviewing literature and discussing current issues.

**PHED5313 Risk Management in Physical Education & Athletics (Even years, Su)** This course is designed to provide opportunities for the student to acquire an understanding of how to reduce the risk of injuries and eliminate hazards that may contribute to injuries associated with physical education and athletics.

**PHED5413 Adapted Physical Education (Even years, Fa)** Methods, techniques and special groups of physical education for the atypical child.

**PHED5553 Scientific Principles of Movement and Performance (Su)** This course focuses on theoretical information about sport biomechanics and movement principles, with practical applications to the physical education of coaching profession.

**PHED574V Internship (Sp, Su, Fa) (1-6)**

**PHED6353 Systematic observation Research in Physical Education (Even years, Sp)** This course will help students understand systematic observation as a tool for studying teaching, coaching, learning; to develop skills in systematic observation techniques; and to collect data on behaviors in physical education and sport.

**PHED6363 Supervision in Physical Education (Odd years, Sp)** The focus of this course is instructional supervision as a set of complex processes in which the supervisor works within accepted guidelines and functions to effectively supervise a teacher's pedagogical development. The Physical Education Instructional Supervision (PEIS) Model will be used to help facilitate this process.

**Philosophy (PHIL)**

**PHIL2003 Introduction to Philosophy (Sp, Su, Fa)** An examination of such basic philosophical topics as the existence of God, the nature of the human mind, the relationship between appearance and reality, the forms and limits of human knowledge, freedom of the will, and standards of right and wrong. Includes both historical and contemporary readings. (Same as PHIL 2003C)

**PHIL2003H Honors Introduction to Philosophy (Sp, Su, Fa)** An examination of such basic philosophical topics as the existence of God, the nature of the human mind, the relationship between appearance and reality, the forms and limits of human knowledge, freedom of the will, and standards of right and wrong. Includes both historical and contemporary readings. (Same as PHIL 2003C)

**PHIL2003C Introduction to Philosophy (Sp, Fa)** An examination of such basic philosophical topics as the existence of God, the nature of the human mind, the relationship between appearance and reality, the forms and limits of human knowledge, freedom of the will, and standards of right and wrong. Includes both historical and contemporary readings. Corequisite: Drill component. (Same as PHIL 2003)

**PHIL2103 Introduction to Ethics (Sp, Su, Fa)** Basic concepts of moral philosophy, including historical and contemporary literature concerned with such issues as ethical relativism vs. objectivism, duty, happiness, freedom of the will and responsibility, facts and

values, individual liberty and society. Application of theories to substantive questions.

**PHIL2203 Logic (Sp, Su, Fa)** Traditional and modern methods of deductive and inductive inference. Degree credit may not be earned for both PHIL 1203 and 2203.

**PHIL3103 Ethics and the Professions (Sp, Su, Fa)** After a survey of the standard theories of moral obligation, justice, and rights, the course focuses on specific moral problems that arise within engineering, business, and the professions.

**PHIL3113 Environmental Ethics (Odd years, Sp)** The course addresses ethical questions about nature and the natural environment. Topics of discussion include anthropocentric and biocentric ethics, population control, obligations to future generations, animal rights, moral considerability, Leopold's land ethic, deep ecology, and ecofeminism.

**PHIL3203 Philosophy and the Christian Faith (Irregular)** This course will deal with philosophical issues that arise in Christian theology. Topics to be discussed may include the doctrines of the Incarnation, the Trinity, Atonement, and Hell, as well as the nature of God and the relationship between faith and reason.

**PHIL390V Readings (Sp, Su, Fa) (1-6)**

**PHIL3923H Honors Colloquium (Sp, Su, Fa)** Treats a special topic of issue offered as part of the honors program. Prerequisite: honors candidacy (not restricted to candidacy in philosophy). (Same as PHIL 3933)

**PHIL3933 Special Studies (Irregular)** A course (not independent study) which covers a topic or a philosopher not usually presented in depth in regular courses. (Same as PHIL 3923H)

**PHIL3943 Philosophy and Physics (Irregular)** Examination of the metaphysical and epistemological implications of specific physical theories with an emphasis on twentieth-century physics. Topics covered may include the nature of space and time (particularly as described in relativity theory), the nature of the quantum mechanical world, and the temporal asymmetries found in thermodynamics and other areas of physics. Prerequisite: PHIL 2003.

**PHIL3983 Capstone Course for Philosophy Majors (Sp)** An undergraduate seminar to be taken in the student's final spring semester. The content will vary with the instructor. The objective is for the student to sharpen his or her philosophical skills by, e.g., writing short papers, giving class presentations, and writing a substantial final essay. Prerequisite: 21 hours of philosophy.

**PHIL399VH Honors Course (Sp, Su, Fa) (1-6)** Prerequisite: Junior standing. May be repeated for up to 12 hours of degree credit.

**PHIL4003 Ancient Greek Philosophy (Fa)** Pre-Socratics, Socrates, Plato, and Aristotle. Prerequisite: 3 hours of philosophy.

**PHIL4013 Platonism & Origin of Christian Theology (Sp)** The study of Plato, Middle Platonism, and Neoplatonism, including Philo, Plotinus, and Proclus, and the influence of Platonism on the Greek church fathers of the 2nd-5th centuries, principally Origen and Gregory of Nyssa and also Pseudo-Dionysius. Prerequisite: 3 hours of philosophy.

**PHIL4023 Medieval Philosophy (Fa)** Includes Augustine, Bonaventure, Aquinas, Scotus, and Ockham.

**PHIL4033 Modern Philosophy-17th and 18th Centuries (Sp)** British and Continental philosophy, including Bacon, Descartes, Spinoza, Leibniz, Hobbes, Locke, Berkeley, Hume, and Kant.

**PHIL4043 Nineteenth Century Continental Philosophy (Fa)** Study of major Continental European philosophers of the 19th century including Hegel, Marx, Kierkegaard, Schopenhauer, Nietzsche. Emphasis on the nature of persons, the question of freedom, and the importance of self-expression, as well as views on knowledge, reality, and the nature of philosophy. Prerequisite: 3 hours of Philosophy.

**PHIL4063 Twentieth Century Continental Philosophy (Sp)** Study of major figures (e.g. Husserl, Heidegger, Sartre, Foucault, Derrida) and trends (phenomenology, existentialism, hermeneutics, critical theory, deconstruction) in 20th century French and German thought. Topics include human beings and their place in the world, the role of history and culture, and the possibility of critical reflection.

**PHIL4073 History of Analytic Philosophy (Sp)** From Frege to recent figures, including Russell, Moore, Wittgenstein, Schlick, Carnap, Ayer, Ryle, Strawson, Quine, including a representative sample of works on the logical analysis of language, logical positivism, and ordinary language analysis. Prerequisite: 3 hours of philosophy.

**PHIL4083 Existentialism (Sp)** Readings in major figures associated with "Existentialism" (e.g. Kierkegaard, Nietzsche, Heidegger, Sartre, Merleau-Ponty). Emphasis on connections between the metaphysical views of these thinkers, their views of freedom, their conceptions of modernity, and their responses to it.

**PHIL4093 Special Topics in Philosophy (Irregular)** This course will cover subject matter not covered in regularly offered courses. May be repeated for up to 6 hours of degree credit.

**PHIL4113 Social and Political Philosophy (Sp)** Selected philosophical theories of society, the state, social justice, and their connections with individuals.

**PHIL4123 Classical Ethical Theory (Fa)** Study of classical

texts in the history of philosophical ethics from Plato to Nietzsche. Philosophers covered may include Plato, Aristotle, Butler, Hume, Kant, and Mill. Prerequisite: 3 hours of philosophy.

**PHIL4133 Contemporary Ethical Theory (Fa)** A study of contemporary texts in philosophical ethics from G.E. Moore to the present. Philosophers covered may include Moore, Stevenson, Hare, Foot, and Rawls. Prerequisite: 3 hours of philosophy.

**PHIL4143 Philosophy of Law (Sp)** A philosophical consideration of the nature of law, theory of adjudication, concepts of legal responsibility, liberty and the limits of law, and selected moral-legal issues (abortion, affirmative action, punishment, etc.).

**PHIL4203 Theory of Knowledge (Fa)** An examination of skepticism, the nature and structures of knowledge and epistemic justification, human rationality, and the justification of religious belief. Prerequisite: 3 hours of philosophy.

**PHIL4213 Philosophy of Science (Fa)** Examination of issues related to scientific explanation, empirical foundations of science, observation and objectivity, nature of laws and theories, realism and instrumentalism, induction and confirmation, models, causation, and simplicity, beginning with historical survey set in the context of the history of science but emphasizing works from the 1930s to the current period, often including issues in recent physics.

**PHIL4233 Philosophy of Language (Sp)** A survey of mainstream philosophical theories of meaning, reference, truth, and logical form. Attention given to the views of such figures as Frege, Russell, Tarski, Searle, Dummett, and the advocates of possible world's semantics.

**PHIL4253 Symbolic Logic I (Fa)** Rigorous analyses of the concepts of proof, consistency, equivalence, validity, implication, and truth. Full coverage of truth-functional logic and quantification theory (predicate calculus). Discussion of the nature and limits of mechanical procedures (algorithms) for proving theorems in logic and mathematics. Informal accounts of the basic facts about infinite sets. (Same as MATH 4253)

**PHIL4303 Philosophy of Religion (Sp)** Types of religious belief and critical examination of their possible validity, including traditional arguments and contemporary questions of meaning.

**PHIL4403 Philosophy of Art (Sp)** Varieties of truth and value in the arts and aesthetic experience, focusing on the creative process in the art and in other human activities.

**PHIL4423 Philosophy of Mind (Sp)** An examination of such topics such as the relationship between mind and body, the mentality of machines, knowledge of other minds, the nature of psychological explanation, the relationships between psychology and the other sciences, mental representation, the nature of the self, and free will and determinism.

**PHIL4603 Metaphysics (Irregular)** Theory and critical analysis of such basic metaphysical problems as mind and body, universals and particulars, space and time, determinism and free will, self-identity and individualism, with emphasis on contemporary perspectives. Prerequisite: 3 hours of philosophy.

**PHIL5823 Seminar: Spinoza (Irregular)**

**PHIL5883 Seminar: Wittgenstein (Irregular)**

**PHIL5933 Seminar: Philosophical Theology (Irregular)**

**PHIL5973 Seminar: Metaphysics (Irregular)**

**PHIL5983 Philosophical Seminar (Irregular)** Various topics and issues in historical and contemporary philosophy. May be repeated for up to 3 hours of degree credit.

**PHIL600V Master's Thesis (Sp, Su, Fa) (1-6)**

**PHIL690V Graduate Readings (Sp, Su, Fa) (1-6)** Supervised individual readings in historical and contemporary philosophy.

**PHIL700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Candidacy.

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## Physics (PHYS)

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**PHYS100V Projects (Sp, Su, Fa) (1-2)** Independent study in experimental or theoretical physics for lower division undergraduate students. May be repeated for up to 2 hours of degree credit.

**PHYS1021M Honors Physics and Human Affairs Laboratory (Sp, Su, Fa)** Laboratory 2 hours per week. Pre- or Corequisite: PHYS 1023H.

**PHYS1021L Physics and Human Affairs Laboratory (Sp, Su, Fa)** Laboratory 2 hours per week. Pre- or Corequisite: PHYS 1023.

**PHYS1023 Physics and Human Affairs (Sp, Su, Fa)** The great ideas of physics, together with their philosophical and social impact. Scientific topics include cosmology, relativity, quantum mechanics. Philosophical and social topics include methods and values of science, problems related to energy sources, and implications of modern weapons. Non-mathematical. Designed for non-science majors. Along with PHYS 1021L, can be used to satisfy a 4-year physical science requirement for a B.A. degree. Students who have received credit in PHYS 2013 and 2033, or 2053 and 2073 cannot also receive degree credit in this course. Corequisite: PHYS 1021L.

**PHYS1023H Honors Physics and Human Affairs (Sp, Su, Fa)** The great ideas of physics, together with their philosophical and social impact. Scientific topics include cosmology, relativity, quantum mechanics. Philosophical and social topics include methods and values of science, problems related to energy sources, and implications of modern weapons. Non-mathematical. Designed for non-science majors. Along with PHYS 1021L, can be used to satisfy a 4-year physical science requirement for a B.A. degree. Students who have received credit in PHYS 2013 and 2033, or 2053 and 2073 cannot also receive degree credit in this course. Corequisite: PHYS 1021L.

**Fa)** The great ideas of physics, together with their philosophical and social impact. Scientific topics include cosmology, relativity, quantum mechanics. Philosophical

and social topics include methods and values of science, problems related to energy sources, and implications of modern weapons. Non-mathematical. Designed for non-science majors. Along with PHYS 1021L, can be used to satisfy a 4-year physical science requirement for a B.A. degree. Students who have received credit in PHYS 2013 and 2033, or 2053 and 2073 cannot also receive degree credit in this course. Corequisite: PHYS 1021M.

**PHYS1034 Physics for Elementary Education Majors (Sp)** For elementary education majors. Physical science concepts based on state frameworks are explored in a mixed lecture/lab environment. The inquiry-based lab activities can be transferable for school classroom use. Topics covered include: scientific inquiry, motion and forces, conservation of energy, heat, light, electricity and simple circuits, and magnetism. Corequisite: Lab component.

**PHYS1044 Physics for Architects I (Fa)** The relation between the principles of physics and the practice of building and operating structures. Topics include: The behavior of structures under various loads, the statics and dynamics of fluids, thermal storage, thermal expansion, the greenhouse effect, heat transfer, refrigeration, the energy problem, efficiency in the operation of buildings. One underlying theme is that the self-sufficiency of a building is an important part of architecture. Lecture 3 hours, laboratory 2 hours per week. Corequisite: Lab component.

**PHYS1054 Physics for Architects II (Sp)** Acoustics, electricity and magnetism, light, and environmental physics. Topics include resonance, acoustical isolation, interference, reverberation time, electrical circuitry with emphasis on power and efficiency, electrical storage, light sources, reflection, refraction, absorption, transmission, color, astronomy (to give perspective to the use of sunlight in architecture), heat, noise, and radioactivity pollution. Lecture 3 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: PHYS 1044.

**PHYS2011L College Physics I Laboratory (Su, Fa)** Laboratory 2 hours per week. Corequisite: PHYS 2010D and PHYS 2013.

**PHYS2013 College Physics I (Su, Fa)** A non-calculus survey of the principles of physics including mechanics, heat and sound. Lecture 3 hours per week and drill 1 hour per week. Corequisite: Drill component and PHYS 2011L. Prerequisite: (MATH 1203 and MATH 1213) or ACT Math Composite scores of 26, and subscores of Elementary Algebra 13, Algebra/Geometry 10, and Trigonometry 10.

**PHYS2031L College Physics II Laboratory (Sp, Fa)** Laboratory 2 hours per week. Corequisite: Drill component and PHYS 2033.

**PHYS2033 College Physics II (Sp, Su)** Continuation of PHYS 2013. Topics include electricity and magnetism, light, relativity, quantum mechanics, atomic and nuclear structure. Lecture 3 hours, drill (PHYS 2030D) 1 hour per week. Corequisite: Drill component and PHYS 2031L. Prerequisite: PHYS 2013.

**PHYS2054 University Physics I (Sp, Su, Fa)** Introduction to the principles of mechanics, wave motion, temperature and heat, with calculus. Lecture three hours per week and practicum two hours a week (included in lab component). Pre- or Corequisite: MATH 2554. Corequisite: Lab component.

**PHYS2054H Honors University Physics I (Sp, Su, Fa)** Introduction to the principles of mechanics, wave motion, temperature and heat, with calculus. Lecture three hours per week and practicum two hours a week (included in lab component). Pre- or Corequisite: MATH 2554. Corequisite: Lab component.

**PHYS2074 University Physics II (Sp, Su, Fa)** Continuation of PHYS 2054. Topics covered include electricity, magnetism, light and geometric optics. Lecture three hours per week and practicum two hours per week. Pre- or Corequisite: MATH 2564. Corequisite: Lab component. Prerequisite: PHYS 2054 or PHYS 2054H.

**PHYS2074H Honors University Physics II (Sp)** Continuation of PHYS 2054H. Topics covered include electricity, magnetism, light and geometric optics. Lecture three hours per week and practicum two hours per week (included in PHYS 2070M). Pre- or Corequisite: MATH 2564. Corequisite: Lab component. Prerequisite: PHYS 2054 or PHYS 2054H.

**PHYS2094 University Physics III (Fa)** A continuation of PHYS 2054 and PHYS 2074. Topics include waves, physical optics, thermodynamics, kinetic theory, and an introduction to quantum mechanics. Lecture 3 hours per week and practicum 2 hours per week (included in lab component). Pre- or Corequisite: MATH 2574. Corequisite: Lab component. Prerequisite: PHYS 2074.

**PHYS220V Introduction to Electronics I (Sp, Su, Fa) (1-2)** Individualized, self-paced laboratory instruction in electronics requiring no previous electronics experience. Topics include basic DC and AC electronics fundamentals. Pre- or Corequisite: MATH 1203 or MATH 1285. May be repeated for up to 2 hours of degree credit.

**PHYS306V Projects (Irregular) (1-3)** Individual experimental or theoretical research problems for advanced undergraduates. May be repeated for up to 3 hours of degree credit.

**PHYS3113 Analytical Mechanics (Fa)** Newton's laws of

motion applied to particles, systems of particles, and rigid bodies.

Introduction to Hamilton's and Lagrange's equations. Pre- or Corequisite: MATH 3404.

**PHYS320V Introduction to Electronics II (Sp, Su, Fa) (1-4)** Individualized, self-paced laboratory instruction in electronics, covers topics including semiconductor devices, electronic circuits, and digital techniques. Prerequisite: PHYS 220V and MATH 2564. May be repeated for up to 4 hours of degree credit.

**PHYS3414 Electromagnetic Theory (Sp)** Electrostatics including dielectrics, magnetostatics and magnetic materials. Maxwell's equations, radiation theory, and wave propagation. Prerequisite: PHYS 2074. Pre- or Corequisite: MATH 3404.

**PHYS3544 Optics (Fa)** Elements of geometrical, physical, and quantum optics. Lecture 3 hours, laboratory 2 hours. Corequisite: Lab component. Prerequisite: PHYS 2074 or MATH 2564.

**PHYS3601L Modern Physics Laboratory (Fa)** Experiments illustrating the development and concepts of modern physics. No credit given toward a B.S. major in physics. Prerequisite: PHYS 3603.

**PHYS3603 Introduction to Modern Physics (Fa)** An introduction to the basic ideas of 20th century physics, with an emphasis on those that form the foundations of modern technology: quantum theory and its application to atomic, nuclear, optical and condensed matter physics. No credit is given toward a B.S. degree in physics. Prerequisite: PHYS 2033 and MATH 2043 or MATH 2554.

**PHYS3614 Modern Physics (Sp, Su, Fa)** Introduction to special relativity, statistical physics, quantum physics, and a survey of nuclear and particle physics. Review of thermal radiation, photon, and wave mechanics. Prerequisite: PHYS 2074.

**PHYS3923H Honors Colloquium (Irregular)** Covers a special topic or issue, offered as part of the honors program. No more than 3 hours may be offered toward fulfillment of the requirements for the B.S. or B.A. degree in Physics. Prerequisite: Honors candidacy (not restricted to candidacy in physics).

**PHYS399V Honors (Sp, Su, Fa) (1-6)** Independent study for physics students enrolled in the honors program. Prerequisite: Junior standing. May be repeated for up to 6 hours of degree credit.

**PHYS400V Laboratory and Classroom Practices in Physics (Sp, Su, Fa) (1-3)** The pedagogy of curricular materials. Laboratory and demonstration techniques illustrating fundamental concepts acquired through participation in the classroom as an apprentice teacher. Prerequisite: PHYS 3113 or PHYS 3414.

**PHYS4073 Introduction to Quantum Mechanics (Fa)** A survey of quantum mechanics from the wave mechanical point of view including the application of quantum mechanics to the simple harmonic oscillator, angular momentum, and the hydrogen atom. Required course for B.S. Physics majors. Prerequisite: PHYS 3614 and MATH 3404.

**PHYS4103 Physics in Perspective (Odd years, Sp)** Human implications of physics, including life's place in the universe, the methods of science, human sense perceptions, energy utilization, social impacts of technology, and the effect of physics on modern world views. No credit given toward a B.S. major in Physics. Prerequisite: PHYS 3603 or PHYS 3614.

**PHYS4113 Physics in Perspective (Odd years, Sp)** Human implications of physics, including life's place in the universe, the methods of science, human sense perceptions, energy utilization, social impacts of technology, and the effect of physics on modern world views. Credit allowed for only one of PHYS 4113 or PHYS 4103. Prerequisite: PHYS 3614.

**PHYS4203 Physics of Devices (Even years, Sp)** Principles of physics applied in a selection of technologically important devices in areas including computing, communications, medical imaging, lasers, and energy utilization. Students will utilize technical journals. No credit given toward a B.S. major in Physics. Prerequisite: PHYS 3603 or PHYS 3614.

**PHYS4213 Physics of Devices (Even years, Sp)** Principles of physics applied in a selection of technologically important devices in areas including computing, communications, medical imaging, lasers, and energy utilization. Students will utilize technical journals. Credit allowed for only one of PHYS 4203 or PHYS 4213. Prerequisite: PHYS 3614.

**PHYS4333 Thermal Physics (Even years, Sp)** Equilibrium thermodynamics, statistical physics, and kinetic energy. Prerequisite: PHYS 3614.

**PHYS4621L Modern Physics Laboratory (Fa)** (Formerly PHYS 462L) Advanced experiments, projects, and techniques in atomic, nuclear, and solid state physics. Prerequisite: PHYS 3614

**PHYS4713 Solid State Physics (Irregular)** Crystal structure, diffraction and symmetry. Lattice vibrations, elasticity and optical properties. Electronic structure, band theory, transport and magnetism. Course emphasizes applications and current topics in semiconductors, optics and magnetism. Pre- or Corequisite: PHYS 3414 and PHYS 4073.

**PHYS4734 Introduction to Laser Physics (Sp)** A combined lecture/laboratory course covering the theory of laser operation, laser resonators, propagation of laser beams, specific lasers such as gas,

solid state, semiconductor and chemical lasers, and laser applications. Prerequisite: PHYS 3414 and PHYS 3544.

**PHYS4774 Introduction to Optical Properties of Materials (Odd years, Sp)** A combined lecture/laboratory course covering crystal symmetry optical transmission and absorption, light scattering (Raman and Brillouin) optical constants, carrier mobility, and polarization effects in semi-conductors, quantum wells, insulators, and other optically important materials. Prerequisite: PHYS 3414 and PHYS 3544.

**PHYS4803 Mathematical Physics (Irregular)** Development of mathematics used in advanced physics, including tensors, matrices, group theory, special functions and operators. Prerequisite: MATH 3404.

**PHYS498V Senior Thesis (Sp, Su, Fa) (1-6)**

**PHYS4991 Physics Senior Seminar (Sp, Su, Fa)** Student mastery of the principles of physics are assessed by means of research paper writing and an examination chosen by the faculty. The research paper may be used to satisfy the Fulbright College writing requirement. (Required of all B.S. and B.A. physics majors in their last year.)

**PHYS500V Seminar (Sp, Su, Fa) (1-3)** Regular informal discussions of research reported in journals and monographs. May be repeated for up to 3 hours of degree credit.

**PHYS5011 Introduction to Current Physics Research Seminar (Fa)**

This seminar course introduces new Physics graduate students to the faculty of the Physics department and their current research efforts. In addition, the students will be introduced to scientific ethics, and learn communication skills.

**PHYS502V Individual Study in Advanced Physics (Sp, Fa) (1-4)** Guided study in current literature. May be repeated for up to 4 hours of degree credit.

**PHYS5033 Design and Fabrication of Scientific Apparatus (Su)** Students will learn mechanical and electronic techniques used in the design and fabrication of scientific apparatus. (This course cannot be used to satisfy degree requirements in any physics program.)

**PHYS5041 Journal Club Seminar (Sp)** In this seminar, the students will present talks based on published research articles. The goal of the course is to develop oral communication skills in the students. Effective literature search techniques will also be covered.

**PHYS5073 Mathematical Methods for Electromagnetics (Fa)** Mathematical methods used in physics with examples from electrostatics and magnetostatics. Prerequisite: MATH 3423 and PHYS 3414.

**PHYS5093 Applications of Group Theory to Physics (Sp)** Application of group theory to topics in physics, especially to atomic/molecular and solid-state physics. Prerequisite: PHYS 5073

**PHYS5103 Advanced Mechanics (Fa)** Dynamics of particles and rigid bodies. Hamilton's equations and canonical variables. Canonical transformations. Small oscillations. Prerequisite: PHYS 5073.

**PHYS5111 Research Techniques Through Laboratory Rotations (Sp)** Graduate students will be introduced to detailed operational aspects of two Physics research laboratories through extensive observation of those laboratory's operations during a six week rotation through each lab. Planning for starting a research project in the summer will take place in the final three week rotation period.

**PHYS5213 Statistical Mechanics (Odd years, Fa)** Classical and quantum mechanical statistical theories of matter and radiation. Prerequisite: PHYS 4333 and PHYS 4073 or PHYS 5413.

**PHYS5263L Experiment and Data Analysis (Sp)** This course is devoted to learning some of the frequently used experimental techniques and methods by which experimental data are analyzed to extract quantitative information on physical parameters. Students will perform experiments, analyze data, and write lab reports. Prerequisite: Graduate Standing or Instructor Consent.

**PHYS5333 Electrodynamics (Sp)** Wave solutions of Maxwell's equations in free space, wave guides, and resonators; radiation, diffraction and scattering of E&M waves; special relativity and the relativistic formulation of Maxwell's equations. Prerequisites: PHYS 3414 and PHYS 5073.

**PHYS5363 Scientific Computation and Numerical Methods (Fa)** An introduction to numerical methods used in solving various problems in engineering and the sciences. May not earn credit for this course and MATH 4353 or MATH 4363. (Same as MATH 5363)

**PHYS5413 Quantum Mechanics I (Fa)** Non-relativistic quantum mechanics; the Schrodinger equation; the Heisenberg matrix representation; operator formalism; transformation theory; spinors and Pauli theory; the Dirac equation; applications to atoms and molecules; collision theory; and semiclassical theory of radiation. Prerequisite: PHYS 4073.

**PHYS5423 Quantum Mechanics II (Sp)** Continuation of PHYS 5413 Prerequisite: PHYS 5413.

**PHYS5513 Atomic and Molecular Physics (Odd years, Sp)** Survey of atomic and molecular physics with emphasis on the

electronic structure and spectroscopy of 1 and 2 electron atoms and diatomic molecules. Includes fine and hyperfine structure, Zeeman and Stark mixing of states, collision phenomena, radiative lifetimes, and experimental techniques. Prerequisite: PHYS 4073 or PHYS 5413.

**PHYS5523 Theory of Relativity (Irregular)** Conceptual and mathematical structure of the special and general theories of relativity with selected applications. Critical analysis of Newtonian mechanics; relativistic mechanics and electrodynamics; tensor analysis; continuous media; and gravitational theory. Prerequisite: PHYS 5103.

**PHYS5613 Introduction to Biophysics and Biophysical Techniques (Sp, Fa)** Origins of biophysics, biological polymers and polymer physics, properties of DNA and proteins, techniques to study DNA and proteins, biological membrane and ion channels, biological energy, experimental techniques to study single DNA and proteins. Two experiments are included: (1) DNA Gel electrophoresis; (2) Measurement of double stranded DNA melting point.

**PHYS5653 Subatomic Physics (Irregular)** Nuclear structure and nuclear reactions. Nature and properties of elementary particles and resonances, their interactions and decays. Phenomenological theory and discussion of experimental evidence. Prerequisite: PHYS 3614.

**PHYS5713 Condensed Matter Physics I (Sp, Fa)** The course covers the Drude theory and the Sommerfeld theory of metals, crystal lattices, reciprocal lattices, X-ray diffraction, Bloch's theory of electrons in periodic potential, formation of band gap, lattice vibration, and cohesive energy in solids. Prerequisite: PHYS 5413.

**PHYS5723 Physics at the Nanoscale (Sp)** This is a cross-disciplinary course that is focused on teaching nanoscience and engineering by studying surface science, the building and analysis of quantum-confined structures, and related nano manufacturing processes. Students will achieve an integrated knowledge of the concepts of surface science, quantum mechanics, nano processing and manipulation, and techniques of materials research. (Same as MEPH 5723)

**PHYS5734 Laser Physics (Sp)** A combined lecture/laboratory course covering the theory of laser operation, laser resonators, propagation of laser beams, specific lasers such as gas, solid state, semiconductor and chemical lasers, and laser applications. Prerequisite: PHYS 3414 and PHYS 3544.

**PHYS574V Internship in College or University Teaching (Sp, Su, Fa) (3-9)** Supervised field experiences in student personnel services, college administration, college physics teaching, institutional research, development, or other areas of college and university work. Pre- or Corequisite: PHYS 400. May be repeated for up to 3 hours of degree credit.

**PHYS5754 Applied Nonlinear Optics (Even years, Fa)** A combined lecture/laboratory course. Topics include: practical optical processes, such as electro-optic effects, acousto-optic effects, narrow-band optical filters, second harmonic generation, parametric amplification and oscillation, and other types of nonlinear optical spectroscopy techniques which are finding current practical applications in industry. Prerequisite: PHYS 3414 and PHYS 3544.

**PHYS5763 Experimental Methods for Nanoscience (Irregular)** Fundamentals of the selected techniques suitable for characterization on the nanoscale. Focus on diverse methods such as x-ray and neutron spectroscopy, scanning probe microscopies, optical methods, electron diffraction methods and more.

**PHYS5773 Introduction to Optical Properties of Materials (Sp)** This course covers crystal symmetry optical transmission and absorption, light scattering (Raman and Brillouin) optical constants, carrier mobility, and polarization effects in semi-conductors, quantum wells, insulators, and other optically important materials. Prerequisite: PHYS 3414 and PHYS 3544 or Permission of Instructor.

**PHYS588V Selected Topics in Experimental Physics (Irregular) (1-3)** May be repeated for up to 3 hours of degree credit.

**PHYS590V Master of Arts Research (Sp, Su, Fa) (1-6)**

**PHYS600V Master of Science Thesis (Sp, Su, Fa) (1-6)**

**PHYS6413 Quantum Mechanics III (Even years, Fa)** Relativistic quantum mechanics, second quantization, with applications to quantizing electromagnetic fields and to many-body theory. Introduction to Feynman diagrams. Prerequisite: PHYS 5423.

**PHYS6513 Advanced Topics in Complexity (Irregular)** The goal of the course is to give students tools to investigate the behavior of complex systems and to analyze the relationship of non-linear dynamics and chaos theory to complex biological and non-biological systems. A special emphasis will be given to understanding the way neurons work as biological computing elements.

**PHYS6613 Quantum Optics (Even years, Fa)** Properties of light and its interaction with atoms, particular attention given to the laser and recent experiments. Classical theory of resonance; Optical Bloch Eqs.; 2 level atoms in steady fields; pulse propagation; semiclassical theory of the laser, coherent states and coherent functions; gas, solid, and dye lasers; photon echoes and superradiance; quantum electrodynamics and spontaneous emission. Prerequisite: PHYS 5413 or equivalent.

**PHYS6713 Condensed Matter Physics II (Even years, Sp)** The course covers surface physics, physics of homogeneous and inhomogeneous semiconductors, dielectric and ferroelectric physics, defects in crystals, spin interaction and magnetic properties, superconductivity, and band structure calculation. Prerequisite: PHYS 5713 and PHYS 5413.

**PHYS700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** May be repeated for up to 18 hours of degree credit.

### Plant Pathology (PLPA)

**PLPA3004 Principles of Plant Pathology (Fa)** Examination of the causes and symptoms of plant disease and the genetics of plant disease. Physiology, and ecology of host-pathogen interactions. Spread of disease and principles of disease control. Corequisite: Lab component.

**PLPA400V Research (Sp, Su, Fa) (1-6)** Original investigations of assigned problems in plant pathology. Prerequisite: PLPA 3004.

**PLPA4103 Plant Disease Control (Fa)** Principles, methods and mechanics of plant disease control. Emphasis is given to the integration of control measures and epidemiology of plant diseases. Lecture 3 hours per week. Prerequisite: PLPA 3004.

**PLPA4304 Applied Plant Disease Management (Irregular)** A plant pathology course emphasizing practical understanding of the concepts and principles of agronomic and horticultural crop disease management, including disease diagnosis, monitoring, and using models to forecast disease events. Prerequisite: PLPA 3004 or instructor consent.

**PLPA4333 Biotechnology in Agriculture (Fa)** Discussion of the techniques, applications, and issues of biotechnology as it is being used in modern agriculture. Coverage includes the basics of molecular biology, production of transgenic plants and animals, and new applications in the agricultural, food, and medical marketplace. Lecture and discussion, 3 hours per week.

**PLPA5001 Seminar (Sp, Fa)** Review of scientific literature and oral reports on current research in plant pathology. Prerequisite: Graduate standing. May be repeated for up to 4 hours of degree credit.

**PLPA502V Special Problems Research (Sp, Su, Fa) (1-6)** Original investigations of assigned problems in plant pathology. Prerequisite: Graduate standing.

**PLPA504V Special Topics (Irregular) (1-18)** Lecture topics of current interest not covered in other courses in plant pathology or other related areas. Prerequisite: Graduate standing. May be repeated for up to 18 hours of degree credit.

**PLPA5303 Advanced Plant Pathology: Host-Pathogen Interactions (Odd years, Sp)** Presentation of important contemporary concepts relative to disease resistance and the physiology, biochemistry, and molecular biology of plant-pathogen interactions. Lecture 3 hours per week. Prerequisite: PLPA 3004 or equivalent and graduate standing.

**PLPA5313 Advanced Plant Pathology: Ecology and Epidemiology (Even years, Sp)** Presentation of important contemporary concepts relative to the ecology and epidemiology of foliar and soil-borne plant pathogens. Lecture 3 hours per week. Prerequisite: PLPA 3004 and graduate standing.

**PLPA5404 Diseases of Economic Crops (Su)** Diagnosis and management of important diseases of cotton, fruits, rice, trees, soybeans, wheat, and vegetables will be covered in a lecture, laboratory, and field format. Lecture 2 hours, laboratory 4 hours per week. Four 1-day field trips will be involved. Corequisite: Lab component. Prerequisite: PLPA 3004.

**PLPA5603 Plant Pathogenic Fungi (Odd years, Fa)** Plant Pathogenic Fungi is structured as an integrated lecture/laboratory class designed for students that are interested in developing an understanding and appreciation for taxonomy, biology, and ecology of plant pathogenic fungi and related saprophytic fungi. Corequisite: Lab component. Prerequisite: PLPA 3004 or BIOL 4424 or graduate standing.

**PLPA5713 Introduction of Electron Microscopy (Sp)** Use of the electron microscope in biological research, including the preparation of various plant and animal specimens and their observation with the electron microscope. Lecture 1 hour, laboratory 4 hours per week. Prerequisite: Graduate standing.

**PLPA600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**PLPA6203 Plant Virology (Odd years, Fa)** Lecture emphasizing discussion of recent advances in plant virology. Laboratory concerned with techniques and equipment used in plant virus studies, including transmission of viruses, characterization utilizing ultracentrifugation, spectrophotometry, electrophoresis, electron microscopy, and serology. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: Graduate standing.

**PLPA6303 Plant Nematology (Even years, Fa)** Nematodes and their relationship to plant diseases, with consideration of identification, morphology, biology, distribution, association with disease

complexes and control. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: Graduate standing.  
**PLPA6503 Plant Bacteriology (Odd years, Sp)** Current concepts and techniques in plant bacteriology, including taxonomic, ecological and molecular aspects of plant pathogenic bacteria and their interactions with hosts. Lecture 2 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: BIOL 2013 and BIOL 2011L. May be repeated for up to 3 hours of degree credit.

### Political Science (PLSC)

**PLSC2003 American National Government (Sp, Su, Fa)** Survey of the history, basic ideas, structure, and political processes of the national government of the United States, including the fundamental relationships of the federal system. Required of all political science majors.  
**PLSC2003H Honors American National Government (Fa)** Survey of the history, basic ideas, structure, and political processes of the national government of the United States, including the fundamental relationships of the federal system.  
**PLSC2013 Introduction to Comparative Politics (Sp, Su, Fa)** An introductory survey of comparative political systems.  
**PLSC2203 State and Local Government (Odd years, Fa)** Organization and functions of state and local governments in the United States, intergovernmental relations, administration, adjudication, and the organization and function of political parties on state and local levels.  
**PLSC2813 Introduction to International Relations (Sp, Fa)** Introduction to the international system, theories of international behavior, political economy, conflict and peacemaking, the third world, international law and organizations, and the nature of the post-cold war world. (Same as FIIR 2813)  
**PLSC300V Internship in Public Affairs (Sp, Su, Fa) (1-3)** Work experience in a public agency arranged by the student under the guidance of a faculty member. Paper required. May be repeated for up to 6 hours of degree credit.  
**PLSC3103 Public Administration (Sp, Fa)** Trends and organization of public administration, dynamics of management; fiscal and personnel management; administrative powers and responsibility. Prerequisite: PLSC 2003.  
**PLSC3153 Public Policy (Fa)** A study of public policy formulation, implementation, and evaluation at various levels of government. Prerequisite: PLSC 2003.  
**PLSC3183 Public Personnel Management (Sp)** Development of the merit system in government, career systems, human resource planning and development, labor relations, diversity issues, and the legal dimension of public personnel systems. Prerequisite: PLSC 2003.  
**PLSC3223 Arkansas Politics (Sp)** The political system in Arkansas including the political process, public policy, social problems, political behavior, governmental structure, and contemporary issues. Prerequisite: PLSC 2003.  
**PLSC3233 The American Congress (Fa)** Thorough examination of the constitutional role of the legislative branch under the Constitution; the internal procedures and personalities of the Senate and House; the central place of Congress in shaping domestic and foreign policy. Prerequisite: PLSC 2003.  
**PLSC3243 The Judicial Process (Fa)** The structure and operation of the state and national court systems. Emphasis is upon the role of the judiciary in the American political system and the political aspects and consequences of judicial decision-making. Prerequisite: PLSC 2003.  
**PLSC3253 Urban Politics (Fa)** Analysis of comparative urban systems, including political process, public policy, social problems, governmental structure, and voter behavior. Prerequisite: PLSC 2003.  
**PLSC3273 Cultures of the South (Sp)** Survey of the diverse ethnic and racial groups of the American South with special emphasis on social and cultural traits related to contemporary developments. (Same as ANTH 3253, SOCI 3253)  
**PLSC3503 Governments and Politics of East Asia (Fa)** Comparative analysis of structures, processes, and problems of the political systems of the Democratic Republic of Vietnam, Japan, and the Peoples Republic of China. Prerequisite: PLSC 2013.  
**PLSC3523 Politics of the Middle East (Fa)** Survey of the unity and diversity in the political development of the Middle East, as evident in historical legacies, state formation, civil society, social class, and political identity.  
**PLSC3573 Governments and Politics of Latin America (Irregular)** Comparative survey of Latin American political forces and institutions with special attention to patterns and problems of political change and development in that area. Prerequisite: PLSC 2003.  
**PLSC3603 Scope and Methods of Political Science (Irregular)** The basic principles and assumptions of political inquiry (methodology) and research techniques for gathering and analyzing data about political phenomena. Prerequisite: PLSC 2003.  
**PLSC3803 International Organization (Sp)** The theory and

practice of international organizations past and present, with emphasis on the United States and a critical examination of current trends. Prerequisite: Junior standing.  
**PLSC3813 International Law (Fa)** Analysis of the traditional principles of public international law including the law of war, the law of sea and air, and the legal nature of statehood; and analysis of selected principles of private international law relevant to such topics as the multinational corporation, international arbitration, commerce with Communist states, and the expropriation of foreign property. Prerequisite: Junior standing.  
**PLSC3823 Theories of International Relations (Sp, Fa)** Analysis of major intellectual traditions in the field of international relations, including realism, liberalism, and social constructivism. Emphasis will be placed on how they help us to understand war, revolution, global capitalism, nationalism, peace, and other significant international phenomena. Prerequisite: PLSC 2003 and PLSC 2013.  
**PLSC3853 American Foreign Policy (Fa)** The structure and process for making and implementing the foreign policy of the United States, and an evaluation of current policies in the contemporary international milieu. Prerequisite: PLSC 2003 or PLSC 2013.  
**PLSC3913 American Political Thought Before 1900 (Fa)** Major ideas, issues, and arguments in American Political Thought from the colonial period to approximately 1900.  
**PLSC3923H Honors Colloquium (Irregular)** Covers a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy in political science.  
**PLSC3933 Contemporary American Political Thought (Sp)** Twentieth century American political thought, including who should participate, expanding concepts of freedom, political economy, equality, feminism, rights, conservatism and liberalism.  
**PLSC394V Readings in Political Science (Sp, Su, Fa) (1-3)** For advanced students who wish to study some field of political science beyond the course offering available in that field. Prerequisite: Junior standing. May be repeated for up to 6 hours of degree credit.  
**PLSC3953 Ancient and Medieval Political Thought (Irregular)** leading political works by classical writers during ancient and medieval European history.  
**PLSC3963 Modern European Political Thought (Fa)** Major European political writings from Machiavelli to the present. Prerequisite: Junior standing.  
**PLSC399VH Honors Course (Sp, Su, Fa) (1-3)** Prerequisite: Junior standing. May be repeated for up to 6 hours of degree credit.  
**PLSC400V Special Topics (Irregular) (1-3)** Topics in political science not usually covered in other courses.  
**PLSC4193 Administrative Law (Sp)** Legal aspects of the administrative process and the effect of legal principles and processes upon administrative decision-making. Emphasis is given to the limitation of administrative discretion and the judicial review of administrative decision. Prerequisite: PLSC 3103 or PLSC 4253.  
**PLSC4203 American Political Parties (Irregular)** The nature, function, and history of political parties in the United States with emphasis on party membership, organization, campaign techniques, finance and electoral alliances. Prerequisite: PLSC 2003.  
**PLSC4213 Campaigns and Elections (Irregular)** This course examines the American electoral process. It is an empirical course that provides opportunities for original analysis of survey data and election returns. Emphasis is placed on the most recent federal election. Prerequisite: PLSC 2003  
**PLSC4233 The American Chief Executive (Sp)** Offices and roles of the President and state governors of the United States focusing on the evolution of the offices in terms of responsibilities and political leadership. Prerequisite: PLSC 2003.  
**PLSC4243 Minority Politics (Even years, Sp)** Reviews political action and concepts of political activity by minority groups, focusing on contemporary political behavior.  
**PLSC4253 The U.S. Constitution I (Sp)** United States Supreme Court decisions involving the functions and powers of Congress, the Supreme Court, and the President and federalism. Prerequisite: PLSC 2003.  
**PLSC4283 Federalism and Intergovernmental Relations (Even years, Sp)** Analysis of changes in intergovernmental relations in the American federal system. Discussions will focus on political, economic/fiscal and administrative aspects of policy changes of the pre-and post-Reagan eras.  
**PLSC4293 African American Politics (Fa)** This is a survey course designed to provide students with a comprehensive overview of African American political participation in the United States. In addition to analyzing important events in African American Politics, the course attempts to explain evolving patterns of political participation in Black America. (Same as AAST 4293)  
**PLSC4303 History of Political Parties in the U.S. 1789-1896 (Even years, Fa)** Origin and development of the American party system from the implementation of the Constitution to the election of McKinley. (Same as HIST 4483, HIST 4503)  
**PLSC4313 History of Political Parties in the United States**

**Since 1896 (Odd years, Sp)** Response of the party system to America's emergence as an industrial nation and world power from the election of 1896 to present. (Same as HIST 4513)  
**PLSC4373 Political Communication (Even years, Sp)** Study of the nature and function of the communication process as it operates in the political environment. (Same as COMM 4373)  
**PLSC4513 Creating Democracies (Even years, Fa)** Analyses of the creation of democracies in Europe, South America, Asia, Africa, the Middle East, East Europe, and the former Soviet Union. Prerequisite: PLSC 2013.  
**PLSC4523 Global Politics of Food (Irregular)** This course explores the politics of food production, processing, transportation, and consumption on a global level. (Same as ANTH 4183)  
**PLSC4563 Government and Politics of Russia (Even years, Sp)** Study of Russian and Soviet politics after 1917 and of the democratization of Russia and the other successor states. Prerequisite: PLSC 2003 or PLSC 2013.  
**PLSC4573 Gender and Politics (Irregular)** Examines the significance of gender in politics. Includes discussion of the women's movement and feminist theory, but emphasizes the content and process of public policy as it relates to women and men. Focus is on the U.S. but final third is devoted to comparative topics. Prerequisite: PLSC 2003 or PLSC 2013.  
**PLSC4593 Islam and Politics (Fa)** Compares contemporary Islamist political movements. Seeks to explain causes, debates, agendas, and strategies of Islamists in the political realm. Addresses sovereignty, the rule of law, visions of the good state and society, and relations between nationalism, religion and political development. Focus on Middle East with comparative reference to other cases.  
**PLSC4803 Foreign Policy Analysis (Irregular)** Comparative analysis of foreign policy, with attention paid to explanations at a variety of levels, such as the individual, group, organizational, societal, systemic.  
**PLSC4813 Politics of the Cold War (Fa)** Examines the cold war from different perspectives; nature of the international system during the cold war; American and Soviet perceptions of the cold war; domestic political considerations; impact of the cold war on the economy, culture, and society; end of the cold war; the post-cold war world.  
**PLSC4823 Foreign Policy of East Asia (Sp)** This course provides an introduction to the international relations of two major East Asian states, China and Japan. Key topics include: China and Japan's interaction with the world political and economic systems; domestic sources of international behavior and major dimensions of foreign policy in the 1980s and 1990s.  
**PLSC4833 International Political Economy (Fa)** This course provides an analysis of the interaction between politics and markets in the world economy. Its central objective is to illustrate how political and state actions have shaped and been shaped by the development of the global economy.  
**PLSC4843 The Middle East in World Affairs (Sp)** An analysis of geo-political and socio-economic characteristics of Middle Eastern societies and their impact on world economic and political order. Special attention to such issues as the Arab-Israeli conflict, the promotion of lasting peace in the region, impact of oil on world politics, the involvement of superpowers, rehabilitation of Palestinian refugees and the role of the United Nations.  
**PLSC4873 Inter-American Politics (Irregular)** An analysis of the political themes, regional organization, and hemispheric relations that constitute the inter-American system, with special emphasis on conflict and cooperation in the hemispheric policies of the American republics. Prerequisite: Junior standing.  
**PLSC4903 Democratic Theory (Fa)** Analysis and comparison of classical and contemporary theories of democracy.  
**PLSC4923 Karl Marx: Life, Work, and Legacy (Irregular)** This course examines the writings of Karl Marx. Students will read and discuss his major works, including Capital, The German Ideology, and Grundrisse. In order to understand Marx's writing, students will also explore his life, times, and legacy. (Same as ANTH 4923)  
**PLSC498V Senior Thesis (Sp, Su, Fa) (1-6)**  
**PLSC499VH Honors Essay (Sp, Su, Fa) (1-3)** Not part of the 30 hours requirement for the major. May be repeated for up to 6 hours of degree credit.  
**PLSC5103 Human Behavior in Complex Organizations (Fa)** Review of the fundamental literature and a systematic analysis of various theories and research focusing on organization and behavior in public administration, including the discussion of organizational development, human motivation, leadership, rationality, efficiency and conflict management in public organizations. Prerequisite: Graduate standing.  
**PLSC5113 Seminar in Human Resource Management (Fa)** Intensive study of public personnel policies and practices, including legal foundations, classification and compensation plans, recruitment and selection processes, training, employment policies and morale, employee relations and organization. Prerequisite: Graduate standing.  
**PLSC5123 Public Budgeting and Finance (Fa)** Focuses on



the budgeting process and governmental fiscal policy formulation, adoption, and execution. Prerequisite: Graduate standing.

**PLSC5133 Management of Service Sector Organizations (Odd years, Sp)** This course provides an overview of the principal management functions in public and nonprofit organizations. Topics include financial management, HR development, program development. The relationships among volunteer boards of trustees, fund raising, public relations, and program personnel are analyzed, and the complex environments with service sector agencies are explored.

**PLSC5143 Administrative Law (Sp)** A seminar which examines the constitutional and statutory basis and authority of public organizations. Special attention focuses on the nature of the rule-making and adjudicatory powers of public agencies and on executive, legislative, and judicial restraints on such activities. Also considered are the role, scope, and place of public regulatory activities. Prerequisite: Graduate standing.

**PLSC5153 Environmental Politics and Policy (Even years, Fa)** Surveys recent patterns of environmentalism in the U.S. and explores the nature of policy making with regard to environmental and economic development issues. Several debates are presented, such as conservation vs. preservation, multiple use vs. sustainability, intergovernmental policy implementation, incentives, and free market environmentalism.

**PLSC5163 Public Policy (Fa)** Research seminar examining the study of public policy making in complex human systems. Attention given to issues dealing with cognitive limitations in decisional settings, the use of reasoned persuasion vs. power, the appropriate application of technical analysis. Prerequisite: Graduate standing.

**PLSC5173 Community Development (Irregular)** Community development encompasses the political, social, and economic issues that shape contemporary communities. The seminar examines substantive issues in community development, related theories, and techniques. A major focus of the course will be on low-income and minority neighborhoods and efforts to create more inclusive communities in the U.S. and abroad.

**PLSC5193 Seminar in Public Administration (Fa)** Introduction to and synthesis of public administration theory, functions, history, public accountability and management concerns, economic impact of administrative decisions, current problems, and issues in the public sector. Prerequisite: Graduate standing.

**PLSC5203 Seminar in American Political Institutions (Fa)** Research seminar dealing with selected aspects of the major governmental institutions in the United States. Prerequisite: Graduate standing.

**PLSC5213 Seminar in American Political Behavior (Sp)** Reading seminar surveying major works on representative processes in American national politics, including political opinion, political leadership, political participation, voting behavior, political parties, and interest groups. Prerequisite: Graduate standing.

**PLSC5243 Seminar in State Politics and Policy (Even Years, Fa)** Research seminar dealing with selected aspects of state political institutions and politics such as policy diffusion, institutional professionalization, and representation. Prerequisite: Graduate standing.

**PLSC5383 Seminar in Political Communication (Irregular)** Research seminar focusing on selected topics such as candidate imagery, diffusion of political information, or political symbolism. Prerequisite: Graduate standing. (Same as COMM 5383)

**PLSC5503 Comparative Political Analysis (Fa)** A selection of topics to provide the theoretical, conceptual and methodological and foundation for the analysis of contemporary political systems. Prerequisite: Graduate standing.

**PLSC5513 Seminar in Politics of the Middle East (Sp, Su, Fa)** Explores the major lines of inquiry on the politics of the state and society in the context of endogenous and exogenous forces that have influenced conceptions of power, legitimacy, and identity. Prerequisite: Graduate standing.

**PLSC5523 Topics in Politics of the Middle East (Sp)** In-depth analysis of specific political phenomena in the contemporary Middle East. Inquiry will vary but may focus on gender, political economy, politics of inclusion and exclusion (democratization and authoritarianism), or the politics of oil. Prerequisite: Graduate standing.

**PLSC5803 Seminar in International Politics (Fa)** Research seminar providing intensive coverage of selected topics in theories of international relations, the comparative study of foreign policy making, and international organizations. Prerequisite: Graduate standing.

**PLSC5833 Seminar in Contemporary Problems (Fa)** Seminar with concentrated reading in selected and specialized areas of contemporary international relations. Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**PLSC5843 International Legal Order (Fa)** Analysis of distinctive characteristics of contemporary international law. Topics include role of legal order in controlling the use of force in international relations and the impact of social and political environment on growth of international law and relations among international political systems.

Prerequisite: Graduate standing.

**PLSC5853 Issues in Public and Nonprofit Management (Sp)** This course is designed to explore current developments and themes in the theory and practice of public and nonprofit management. It covers a range of contemporary issues in the field, such as managing collaborative network, e-government, and managing for results. These emerging trends are intensively discussed at the juncture of theory and practice.

**PLSC590V Directed Readings in Political Science (Sp, Su, Fa) (1-3)** Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**PLSC5913 Research Methods in Political Science (Fa)** Methods relevant to research in the various fields of political science. Required of all graduate students in political science. Prerequisite: Graduate standing.

**PLSC592V Internship in Political Science (Sp, Su, Fa) (1-6)** Internship in a local, state, regional, or federal agency. Paper required on a significant aspect of internship experience. Prerequisite: Graduate standing.

**PLSC593V Special Topics (Sp, Su, Fa) (1-3)** Topics in political science not usually covered in other courses. Prerequisite: Graduate Standing. May be repeated for up to 3 hours of degree credit.

**PLSC595V Research Problems in Political Science (Sp, Su, Fa) (1-3)** Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**PLSC5963 Modern Political Thought (Fa)** European political thinking since the rise of the nation-state and the relevance of that tradition to contemporary politics. Prerequisite: Graduate standing.

**PLSC5973 Contemporary Normative Political Theory (Sp)** Analysis of current normative problems of political theory such as obligation, dissent, justification, sovereignty and tolerance, and major schools of thought including Marxism, liberalism and western conservatism. Prerequisite: Graduate standing.

**PLSC600V Master's Thesis (Sp, Su, Fa) (1-6)**

## Poultry Science (POSC)

**POSC1023 Introduction to Poultry Science and Careers (Fa)** Students will be introduced to biological sciences associated with poultry and to career areas in poultry. Topics will include genetics, reproductive and digestive anatomy, egg formation and embryology, physiology, housing, and ventilation. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component.

**POSC2003 Fundamentals of Food Microbiology (Sp, Su, Fa)** The impact of intrinsic or extrinsic factors on bacteria will be examined. Course information will address the basis of the Hudele Theory or creating multiple barriers to growth, and will also set the stage for understanding predictive microbiology. Factors discussed include redox potential, water activity, pH, time and temperature. Web-based. Prerequisite: Instructor permission.

**POSC2353 Poultry Production and Management (Sp)** Students will be introduced to the management practices used in production of young and adult chickens, turkeys, and other poultry with special emphasis on broiler, breeder, and market egg production. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. Prerequisite: POSC 1023.

**POSC3013 Exotic Companion Birds (Odd years, Fa)** Topics include basic care, health, breeding, bird evolution, anatomy, and nutritional management of commonly kept exotic companion birds, including parrots, cockatoos, macaws, finches, canaries, and pigeons. Discussion will include housing and care for individual pet birds and large scale breeding and production. Lecture/discussion 3 hours per week. Prerequisite: BIOL 1543.

**POSC3032 Animal Physiology I (Fa)** Fundamental aspects of neural/muscle/bone tissues and the cardiovascular system. The normal structure and functions of these systems will be emphasized. Lecture 2 hours per week. Prerequisite: BIOL 1543 and CHEM 1123 or CHEM 1074. (Same as ANSC 3032)

**POSC3042 Animal Physiology II (Sp)** Fundamental aspects of renal, respiratory, digestive, and endocrine physiology will be covered. The normal structure and function of these systems will be emphasized. Lecture 2 hours per week. Prerequisite: ANSC 3032 or POSC 3032. (Same as ANSC 3042)

**POSC3123 Principles of Genetics (Fa)** Fundamentals of heredity, with special emphasis on the improvement of farm animals. Lecture 3 hours per week. Prerequisite: BIOL 1543 and MATH 1203 or higher. (Same as ANSC 3123)

**POSC3223 Poultry Diseases (Fa)** Common diseases affecting poultry reared under commercial conditions will be covered including diagnosis, therapy and prevention. Immunity, sanitation practices, and chemoprophylaxis will also be covered. Lecture 3 hours per week with some demonstrations, slides and videotapes. Prerequisite: BIOL 2013 and BIOL 2011L and junior standing.

**POSC3381 Poultry Judging and Selection (Sp, Fa)** Practice in production judging and flock selection. Laboratory 3 hours per week. May be repeated for up to 4 hours of degree credit.

**POSC3554 Avian Anatomy (Sp)** Detailed coverage of the external and internal anatomy of poultry, including formation and development of the egg and embryo. Lecture 3 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: BIOL 1543.

**POSC400V Special Problems (Sp, Su, Fa) (1-9)** Special problems in the poultry sciences for advanced students. May be repeated for up to 9 hours of degree credit.

**POSC401V Internship in Poultry Science (Sp, Su, Fa) (1-6)** Supervised work experience with private or government organizations to introduce students to professional areas of work in poultry science. Prerequisite: Junior standing. May be repeated for up to 8 hours of degree credit.

**POSC4023 Advanced Topics in Food Safety Management (Sp, Su, Fa)** This capstone experience for students in the HACCP Coordinator Certificate program requires completion of selected reading materials prior to spending an intensive week in an on-campus institute at UAF. Activities include group projects, case studies, on-line library resource acquisition and industry/regulatory HACCP Round Table discussions. Prerequisite: Instructor permission.

**POSC4034 Statistical Process Control in the Food Industry (Sp, Su, Fa)** Analysis of processing data related to food safety, quality, governmental critical limits and customer specifications. Emphasizes statistical process control chart development, including understanding data and chart selection, calculating statistical limits, and interpreting process performance. Covers quality topics appropriate for students following careers in food safety, quality, or manufacturing. Web-based. Prerequisite: Instructor permission.

**POSC410V Special Topics in Poultry Science (Irregular) (1-4)** Topics not covered in other courses or for a more intensive study of specific topics in poultry science. Prerequisite: POSC 1023.

**POSC4213 Integrated Poultry Management Systems (Even years, Sp)** Major managerial systems in the integrated commercial poultry industry. Development of an understanding of the basic decision making processes of poultry companies and the factors influencing those decisions. Prerequisite: POSC 2353 and AGEC 1103 and AGEC 2303.

**POSC4314 Egg and Meat Technology (Fa)** Study of the science and practice of processing poultry meat and egg products; examination of the physical, chemical, functional and microbiological characteristics of value added poultry products; factors affecting consumer acceptance and marketing of poultry products and the efficiency of production. Corequisite: Lab component. Prerequisite: (CHEM 1123 and CHEM 1121L) or (CHEM 1074 and CHEM 1071L) and BIOL 1543 and BIOL 1541L.

**POSC4333 Poultry Breeding (Odd years, Fa)** Application of new developments in poultry breeding for efficient egg and meat production. Not intended for students interested in a career in veterinary sciences. Lecture 3 hours per week. Prerequisite: MATH 1203 or higher and junior standing.

**POSC4343 Poultry Nutrition (Sp)** Principles of nutrition as applied to the formulation of practical chicken and turkey rations. Lecture 3 hours per week. Prerequisite: CHEM 2613 or CHEM 3603 and junior standing.

**POSC4901 Undergraduate Seminar (Sp)** Required by all poultry science majors. Prerequisite: Junior standing.

**POSC4923 Brain and Behavior (Fa)** Covers cellular through neural systems, major brain functions and comparative neuro-anatomy. Topics include ion channels, membrane and action potentials, synaptic integration, neurotransmitters, major brain regions of mammals and birds, sensory and autonomic nervous systems, neuroendocrine system, and control by the brain of critical functions and behavior. Lecture 3 hours per week. Pre- or Corequisite: CHEM 3813. Corequisite: Drill component. Prerequisite: ANSC/POSC 3032 or ANSC/POSC 3042, or PSYC 2003, or BIOL 2213, or BIOL 2443, or BIOL 2533.

**POSC500V Special Problems (Sp, Su, Fa) (1-6)** Work in special problems of poultry industry. Prerequisite: Graduate standing.

**POSC510V Special Topics in Poultry Sciences (Irregular) (1-4)** Topics not covered in other courses or a more intensive study of specific topics in poultry science. Prerequisite: Graduate standing.

**POSC5123 Advanced Animal Genetics (Even years, Fa)** Specialized study of animal genetics. Lecture 3 hours per week. Prerequisite: POSC 3123 or ANSC 3123. (Same as ANSC 5123)

**POSC5143 Biochemical Nutrition (Even years, Fa)** Inter-relationship of nutrition and physiological chemistry; structure and metabolism of physiologically significant carbohydrates, lipids, and proteins; integration of metabolism with provision of tissue fuels; specie differences in regulatory control of tissue and whole body metabolism of nutrients. Prerequisite: CHEM 3813. (Same as ANSC 5143)

**POSC5152 Protein and Amino Acid Nutrition (Even years, Sp)** Students will be introduced to the basic processes of protein digestion, amino acid absorption, transport, metabolism, and utilization along with how biochemical function of proteins and their dynamic state affect nutritional status for animals and man. Prerequisite: CHEM 3813. (Same as ANSC 5152)

**POSC5313 Domestic Animal Bacteriology (Fa)** A study of bacteria pathogenic for domestic animals. Lecture 3 hours per week.

**POSC5343 Advanced Immunology (Sp)** Aspects of innate, cell-mediated, and humoral immunity in mammalian and avian species. Molecular mechanisms underlying the function of the immune system are emphasized. A course in Basic Immunology prior to enrollment in Advanced Immunology is recommended but not required. Lecture 3 hours per week. (Same as BIOL 5343)

**POSC5352L Immunology in the Laboratory (Sp)** Laboratory course on immune-diagnostic laboratory techniques and uses of antibodies as a research tool. Included are cell isolation and characterization procedures, immunochemistry, flow cytometry, ELISA and cell culture assay systems. Laboratory 6 hours per week. Prerequisite: POSC 5343 or BIOL 5343 or BIOL 4713.

**POSC5742 Advanced Poultry Diseases (Odd years, Sp)** An in-depth coverage of the most important diseases of poultry with a focus on understanding mechanisms of pathogenesis, diagnostic techniques and principles of prevention. Lecture/discussion 2 hours per week. Prerequisite: POSC 3223.

**POSC5743L Advanced Analytical Methods in Animal Sciences Laboratory (Fa)** Introduction into theory and application of current advanced analytical techniques used in animal research. Two 3-hour laboratory periods per week. (Same as ANSC 5743L)

**POSC5763 Protozoan Parasites of Domestic Livestock and Companion Animals (Even years, Fa)** Course topics will include economically and medically important protozoan parasites of domestic livestock and companion animals, with an emphasis on their significance for animal and human health. Lecture/discussion 3 hours per week. Prerequisite: General undergraduate biology and chemistry. (Same as ANSC 5763)

**POSC5873 Molecular Analysis of Foodborne Pathogens (Fa)** Course topics will include molecular detection and identification of foodborne pathogens, the molecular response of foodborne pathogens to their environments, functional genomic approaches, and analysis of complex microbial communities. Lecture/discussion 3 hours per week.

**POSC5901 Graduate Seminar (Sp, Fa)** Critical review of the current scientific literature pertaining to the field of poultry science. Oral reports. Recitation 1 hour per week. Prerequisite: Senior standing.

**POSC5923 Brain and Behavior (Fa)** Course covers cellular through neural systems, major brain functions and comparative neuroanatomy between mammals and birds. Specific topics include coverage of ion channels, membrane potentials, action potentials, synaptic integration, neurotransmitters, major brain regions of mammals and birds, sensory systems and the autonomic nervous system. Lecture 3 hours per week; journal club 1 hour per week. Pre- or Corequisite: CHEM 3813. Corequisite: Drill component. Prerequisite: ANSC/POSC 3032 and ANSC/POSC 3042, or PSYC 2003, or BIOL 2213, or BIOL 2443, or BIOL 2533.

**POSC5932 Cardiovascular Physiology of Domestic Animals (Fa)** Cardiovascular physiology, including mechanisms of heart function and excitation, and blood vessel mechanisms associated with the circulatory system in domestic animals and poultry. Lecture 3 hours; Neuroscience Journal Club 1 hour per week (for first 8 weeks of semester). Pre- or Corequisite: CHEM 3813. Corequisite: Drill component. Prerequisite: ANSC/POSC 3032 and ANSC/POSC 3042. (Same as ANSC 5932)

**POSC5942 Endocrine Physiology of Domestic Animals (Fa)** Endocrine physiology, including mechanisms of hormone secretion, function, and regulation. Mechanisms associated with the endocrine system will be discussed for domestic animals and poultry. Lecture 3 hours; drill 1 hour per week (for second 8 weeks of semester). Pre- or Corequisite: CHEM 3813. Corequisite: Drill component. Prerequisite: ANSC/POSC 3032 and ANSC/POSC 3042. (Same as ANSC 5942)

**POSC5952 Respiratory Physiology of Domestic Animals (Sp)** Respiratory physiology, including mechanisms of lung function and gas exchange. Mechanisms associated with the interaction of the respiratory system with other bodily systems in domestic animals and poultry will be discussed. Lecture 3 hours; drill 1 hour per week for first 8 weeks of semester. Pre- or Corequisite: CHEM 3813. Corequisite: Drill component. Prerequisite: ANSC/POSC 3032 and ANSC/POSC 3042. (Same as ANSC 5952)

**POSC5962 Gastrointestinal/Digestive Physiology of Domestic Animals (Sp)** Gastrointestinal and hepatic physiology, including mechanisms of digestion, absorption of nutrients with emphasis on cellular control mechanisms in domestic animals and poultry. Lecture 3 hours; drill 1 hour per week (for second 8 weeks of semester). Pre- or Corequisite: CHEM 3813. Corequisite: Drill component. Prerequisite: ANSC/POSC 3032 and ANSC/POSC 3042 (Same as ANSC 5962)

**POSC5972 Renal Physiology of Domestic Animals (Sp)** Renal physiology, including mechanisms of renal clearance with emphasis on cellular control mechanisms in domestic animals and poultry. Lecture 3 hours; drill 1 hour per week (for second 8 weeks

of semester). Pre- or Corequisite: CHEM 3813. Corequisite: Drill component. Prerequisite: ANSC/POSC 3032 and ANSC/POSC 3042. (Same as ANSC 5972)

**POSC600V Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**POSC6343 Vitamin Nutrition in Domestic Animals (Even years, Sp)** The vitamins required by domestic animals with emphasis upon their role in animal nutrition, physiological functions, and consequences of failure to meet the requirement of the animal. Lecture 3 hours per week. Prerequisite: (ANSC 3143 or POSC 4343) and CHEM 3813. (Same as ANSC 6343)

**POSC700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Graduate standing.

## Psychology (PSYC)

**PSYC2003 General Psychology (Sp, Su, Fa)** An introduction to the field of Psychology, including the investigation of the biological bases of behavior; learning and cognitive processes; developmental and social psychology; and personality, psychopathology, and the treatment of psychological disorders. Students will be expected to complete a research requirement.

**PSYC2003H Honors General Psychology (Sp, Fa)** An introduction to the field of Psychology, including the investigation of the biological bases of behavior; learning and cognitive processes; developmental and social psychology; and personality, psychopathology, and the treatment of psychological disorders. Students will be expected to complete a research requirement.

**PSYC2013 Introduction to Statistics for Psychologists (Sp, Fa)** Introduction to the descriptive and inferential statistics commonly used by psychologists. A grade of C or better in PSYC 2013 is required as a prerequisite for PSYC 3073. Prerequisite: PSYC 2003.

**PSYC206V Directed Readings (Sp, Su, Fa) (1-4)** For undergraduate majors in psychology. Prerequisites: Six hours of psychology; Instructor's permission. May be repeated for up to 6 hours of degree credit.

**PSYC207V Laboratory Experience (Sp, Su, Fa) (1-4)** Laboratory experience in psychology obtained by working as part of a faculty member's research team. Prerequisite: Instructor's permission. May be repeated for up to 6 hours of degree credit.

**PSYC3013 Social Psychology (Sp, Fa)** Theories and representative research in social psychology, emphasizing the influence of the social world on human behavior. Introduction to the problems, theories, and experiments of social psychology. Prerequisite: PSYC 2003.

**PSYC3023 Abnormal Psychology (Sp, Fa)** Theories and representative research about the causes and treatment of the major forms of abnormal behavior. Prerequisite: PSYC 2003.

**PSYC3053 Psychology of Business and Industry (Irregular)** Application of psychological principles to the problems of business and industry with emphasis upon employee morale and attitudes, labor turnover, industrial relations, safety, fatigue, etc. Prerequisite: PSYC 2003.

**PSYC3073 Research Methods (Sp, Fa)** Training in execution and interpretation of experiments using the classical experimental designs. Limited enrollment. Prerequisite: PSYC 2013 with a grade of "C" or better.

**PSYC3093 Developmental Psychology (Sp, Fa)** Theories and representative research in the psychological factors influencing development, including both hereditary and environmental influences, from conception through adolescence. Prerequisite: PSYC 2003.

**PSYC3103 Cognitive Psychology (Sp)** Introduction to theories and research in cognition including memory, language, and problem-solving. Prerequisite: PSYC 2003.

**PSYC328V Advanced Research (Sp, Su, Fa) (1-3)** A lecture/laboratory course covering research in a specialized area of psychology. Provides experience with design, conduct, analysis, and presentation of research projects related to class topics. Successful completion of the class, including a formal paper in APA style, with a grade of C or better will fulfill the senior writing requirement. Prerequisite: PSYC 3073 with a grade of C or better.

**PSYC3923H Honors Colloquium (Irregular)** Treats a special topic or issue, offered as part of the honors program. May be repeated when the content is changed. Prerequisite: honors candidacy (not restricted to candidacy in psychology).

**PSYC399VH Honors Course (Sp, Su, Fa) (1-6)** Prerequisite: Junior standing and instructor's permission. May be repeated for up to 12 hours of degree credit.

**PSYC4033 Educational Psychology (Irregular)** Psychological theories and concepts applied to the educational process. Investigates the learner and instructional variables in a wide range of educational settings. Prerequisite: Six hours of psychology, not including PSYC 2014.

**PSYC4053 Psychological Tests (Irregular)** Nature and theory

of individual and group tests of intelligence, personality, interests, and attitudes. Prerequisite: Nine hours of psychology, including a C or better in PSYC 2013.

**PSYC4063 Psychology of Personality (Irregular)** Theories and representative research concerning the development and nature of the normal personality. Prerequisite: Six hours of psychology, not including PSYC 2014.

**PSYC4073 Psychology of Learning (Sp)** Theories and representative research on basic principles of learning and memory in both animals and humans. Prerequisite: Six hours of psychology, not including PSYC 2013.

**PSYC409V Psychology Seminar (Irregular) (1-6)** Provides intensive coverage of specialized psychological topics. Prerequisite: Six hours of psychology, not including PSYC 2013. May be repeated for up to 18 hours of degree credit.

**PSYC4123 Perception (Irregular)** Theories and representative research in the areas of sensation and perception. Prerequisite: Six hours of psychology, not including PSYC 2013.

**PSYC4133 Behavior Modification (Irregular)** Introduction to the basic principles of behavior modification and contingency management. Presents procedures of conditioning, reinforcement, token economy and self-control of individuals and groups in a variety of settings with emphasis on discussions of research and ethics. Prerequisite: Nine hours of psychology, including PSYC 4073.

**PSYC4143 History and Systems of Psychology (Irregular)** Examination of the concepts, methods, and systems which have contributed to the development of modern psychology. Prerequisite: Fifteen hours of psychology and senior standing.

**PSYC4183 Behavioral Neuroscience (Fa)** Examination of the biological basis of behavior. Surveys the anatomy, physiology, and pharmacology of the mammalian brain and examines brain mechanisms underlying a wide range of behaviors and cognitive processes. Prerequisite: Six hours of psychology, not including PSYC 2013.

**PSYC4193 Comparative Psychology (Sp)** Analysis of animal behavior from an evolutionary perspective, with emphasis on the role of the environment and interactions with other animals in shaping the evolution of behavior within a species, and the evolution of differences in behavior between species. Prerequisite: Six hours of psychology, not including PSYC 2013.

**PSYC4283 Advanced Seminar (Sp, Fa)** A seminar/discussion class covering research in specialized areas of psychology. Students will read original sources and present their ideas and conclusions several formats. Successful completion of the class, including a formal paper in APA style, with a grade of C or better will fulfill the senior writing requirement. Prerequisite: Eighteen hours of psychology including a grade of at least a C in PSYC 3073; senior standing. May be repeated for up to 6 hours of degree credit.

**PSYC5013 Advanced Developmental Psychology (Sp)** Critical examination of the research relevant to the psychological factors influencing the growth processes of the individual from birth to maturity. Prerequisite: PSYC 4073.

**PSYC5023 Neuropsychological Assessment (Irregular)** Introduction to the principles, techniques, and tools of assessment in clinical neuropsychology. Includes training in the interpretation, integration, and reporting of results. Prerequisite: PSYC 5043; enrollment in the Psychology graduate program.

**PSYC5033 Psychopathology (Fa)** Psychological and somatic factors contributing to pathological behavior. Interrelations of these factors will be analyzed in terms of how they lead to differential abnormal states. Prerequisite: PSYC 3023; enrollment in the Graduate Program in Psychology, or consent.

**PSYC5043 Assessment of Intellectual and Cognitive Abilities (Fa)** Training in the theory, administration and interpretation of individual tests of intelligence and mental ability. Prerequisite: PSYC 4053; Enrollment in the Psychology Graduate Program.

**PSYC5053 Advanced Personality Assessment and Clinical Diagnosis (Fa)** Guidelines for using standardized instruments and structured interviews in the diagnosis and clinical assessment of major psychological disorders. Includes training in the interpretation, integration, and reporting of results. Prerequisite: PSYC 5043 and PSYC 5163.

**PSYC5063 Advanced Social Psychology (Sp)** Theory, methodology, and contemporary research in the major areas of social psychology. Topics include attitude theory and measurement, group processes, social and cultural factors.

**PSYC5073 Introduction to Clinical Practice: Core Skills and Ethical Guidelines (Sp, Fa)** (Formerly PSYC 507) An introduction to clinical practice focusing on a) interview methods and techniques and b) ethical principles and guidelines. Prerequisite: Enrollment in the Psychology graduate program.

**PSYC5113 Theories of Learning (Fa)** Major concepts in each of the important theories of learning. Prerequisite: PSYC 4073.

**PSYC5123 Cognitive Psychology (Even years, Sp)** Contemporary theories and research on human information processing including topics such as memory, language, thinking, and problem solving.

**PSYC5133 Inferential Statistics for Psychology (Fa)** Inferential statistics, including representative parametric tests of significance. Special emphasis on analysis of variance, covariance, and component variance estimators as applied to psychological research. Prerequisite: PSYC 2013 or STAT 2013.

**PSYC5143 Advanced Descriptive Statistics for Psychology (Sp)** Special correlation techniques followed by a survey of representative nonparametric tests of significance. Major emphasis on advanced analysis of variance theory and designs. Prerequisite: PSYC 5133.

**PSYC5153 Advanced History and Systems of Psychology (Fa)** Advanced examination of the concepts, methods, and systems which have contributed to the development of modern psychology.

**PSYC5163 Personality: Theory & Disorder (Sp)** An introduction to empirically based theories of personality and personality disorders with an emphasis on clinical application and intervention. Prerequisite: Enrollment in the Psychology graduate program or consent.

**PSYC523V Research Practicum (Sp, Fa) (1-3)** Presentation, evaluation, and discussion of on-going research proposals. Required of all experimental graduate students in the first 2 years of their program.

**PSYC5313 Introduction to Clinical Science: Research Design and Ethical Guidelines (Fa)** Provides a) guidelines for designing and conducting empirical research in clinical psychology, b) ethical principles that regulate clinical research, and c) supervised opportunities to develop a clinical research proposal. Prerequisite: Enrollment in the Psychology graduate program.

**PSYC600V Master's Thesis (Sp, Su, Fa) (1-6)**

**PSYC602V Seminar: Teaching Psychology (Sp, Fa) (1-3)** Survey of the literature on teaching of psychology in college. Includes: planning the course, method, examining and advising students. Prerequisite: Teaching assistant.

**PSYC607V Clinical Practicum III (Sp, Fa) (1-3)** Provides supervised experience in the application of the more complex and lesser known psychodiagnostic techniques and training and experience in psychotherapeutic techniques with the more severe functional disorders. Level of responsibility and independence to increase in 608V. Prerequisite: PSYC 5073; Enrollment in the Psychology graduate program.

**PSYC608V Clinical Practicum IV (Sp, Fa) (1-3)** Provides supervised experience in the application of the more complex and lesser known psychodiagnostic techniques and training and experience in psychotherapeutic techniques with the more severe functional disorders. Prerequisite: PSYC 5073; enrollment in the Psychology graduate program.

**PSYC609V Clinical Graduate Seminar (Sp, Fa) (1-3)** Provides intensive coverage of specialized clinical topics. Open to all graduate students. May be repeated for up to 3 hours of degree credit.

**PSYC611V Individual Research (Sp, Su, Fa) (1-18)** May be repeated for up to 18 hours of degree credit.

**PSYC6133 Advanced Behavioral Neuroscience (Fa)** Examination of the biological basis of behavior, with emphasis on underlying neural mechanisms.

**PSYC6163 Psychotherapy (Sp)** A conceptual overview of psychotherapy, with an emphasis on a) common mechanisms, and b) cognitive and interpersonal approaches. Prerequisite: PSYC 5033.

**PSYC6213 Behavior Therapy (Even years, Fa)** Provides clinical experience and training in the major behavior modification technique. Includes also a critical evaluation of theory, research, and issues in the area. Prerequisite: Enrollment in the Psychology graduate program.

**PSYC6223 Diversity Issues in Clinical Psychology (Sp)** The impact of clients' diversity on assessment, treatment, and research in clinical psychology. Broad coverage with an emphasis on implications for clinical practice. Prerequisite: Enrollment in the Psychology graduate program or consent.

**PSYC6233 Professional Issues in Clinical Practice (Irregular)** Examination of major issues the professional practice of clinical psychology, including regulations governing licensure, the business of behavioral health care, and the role of clinical psychologists in the courts. Prerequisite: Enrollment in the Psychology graduate program.

**PSYC6323 Seminar in Developmental Psychology (Odd years, Fa)** Discussion of selected topics in the area of human development. Emphasis will be on a review of current theory and empirical research. Topics selected for discussion could range from early development (child psychology), to later development (psychology of adulthood and aging-gerontology), to current attempts to integrate the field (life-span developmental psychology).

**PSYC6343 Seminar in Quantitative Methods (Irregular)** Discussion of selected mathematical approaches to theorizing and research in psychology. Emphasis will be on generalization of a given approach across several content areas of psychology. Hence, while each area must be treated in reasonable depth, current thinking and

research spanning more than one content area will be stressed.

**PSYC6353 Seminar in Learning/Memory/Cognition (Odd years, Sp)** Discussion of selected topics in learning, memory, or cognition. Emphasis on current theory and empirical research. Topics selected for discussion may be in the areas of learning, memory, problem solving, or language.

**PSYC6373 Seminar in Personality and Social Psychology (Fa)** Discussion of selected topics in social psychology and personality. Current theoretical positions and recent research findings are emphasized. Topics selected for discussion will be in areas of intrapersonal processes, interpersonal processes, group processes or any of various areas of personality.

**PSYC6413 Seminar in Physiological Psychology (Odd years, Sp)** Discussion of selected topics in physiological psychology. Emphasis will be on a review of current theory and empirical research. Each offering of the seminar will examine the biological basis of a specific aspect of behavior, utilizing both animal and human data.

**PSYC698V Field Work (Sp, Su, Fa) (1-3)** Provides academic credit for field work in multidisciplinary setting, involving supervised experiences in assessment and psychotherapy.

**PSYC699V Clinical Psychology Internship (Sp, Su, Fa) (1-3)** Supervised experience in a multidisciplinary setting of assessment and psychotherapy.

**PSYC700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Candidacy.

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### Plant Sciences (PTSC)

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**PTSC6101 Colloquium in Plant Sciences (Sp)** Advanced discussion of topics in plant science on a participatory basis. Topics in plant pathology, horticulture and forestry will be treated. Prerequisite: Graduate standing. May be repeated for up to 2 hours of degree credit.

**PTSC6203 Laboratory Instrumentation in Plant Science (Odd years, Sp)** Principles, capabilities, and operation of laboratory instrumentation utilized in plant science research. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component.

**PTSC700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Graduate standing.

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### Public Policy (PUBP)

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**PUBP6001 Pro-Seminar (Fa)** An introduction to the field of public policy and to the program. The seminar will address topics such as the meaning of public policy, policy research, the dissertation process, and particular issues of public policy concern. Prerequisite: Admission to program.

**PUBP6023 Law and Public Policy (Fa)** This course focuses on the legal aspects of public policy, with emphasis on the regulatory process and its legal constraints. Also considered are the process of administrative decision making, judicial review, legislative oversight, and public access to government information. Co- or Prerequisite: PUBP 6012.

**PUBP604V Special Topics in Public Policy (Irregular) (1-6)** Designed to cover specialized topics not usually presented in depth in regular courses. May be repeated for up to 6 hours of degree credit.

**PUBP6103 Policy Leadership Seminar (Irregular)** This interdisciplinary seminar will explore the relationship between policy, public administration, and organizations in the community. Stakeholder groups will be considered as part of the newer approaches to practice-driven scholarship. The class will examine innovative approaches to decision making, strategic management and policy leadership in complex interorganizational and interagency settings.

**PUBP6113 Agenda Setting and Policy Formulation (Irregular)** This course is a seminar on agenda and policy formation focusing on the classic theoretical and empirical literature. The course is designed to introduce graduate students to a variety of theories typologies, concepts, and ideas relating to the study of public policy.

**PUBP612V Research Problems in Policy (Sp, Su, Fa) (1-6)** May be repeated for up to 6 hours of degree credit.

**PUBP6134 Capstone Seminar in Public Policy (Sp, Fa)** This course is intended to integrate various policy interests in a specific community based project.

**PUBP700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: candidacy. May be repeated for up to 18 hours of degree credit.

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### Recreation (RECR)

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**RECR1003 Professional Foundations of Leisure (Sp, Fa)** An analysis of the historical and philosophical development of recreation and leisure. Theories of play, recreation, and leisure are studied. Economic, political, technical, and social forces are examined as these influence recreation, parks, and leisure services is examined in context with diverse service delivery systems.

**RECR1023 Recreation and Natural Resources (Fa)** An

examination of the use and management of natural resources for outdoor recreation with consideration of multiple use, environmental ethics, risk management, and other current considerations. Several field visits will be required as part of the class, including a weekend outing.

**RECR201V Recreation Practicum (Sp, Su, Fa) (1-3)** Students are assigned to assist in leisure-oriented programs for exposure to organizational structure, services, and programming of cooperating recreational agencies. Students may take 1-3 hours per semester; each credit hour is a 45-hour experience. Students must complete 3 different experiences before internship. Prerequisite: RECR 1003.

**RECR2063 The Commercial Recreation and Tourism Enterprise (Fa)** Examination of the commercial recreation and tourism industries. The operational requirement of a wide range of recreation businesses will be studied. Case study and field investigation methods will be emphasized.

**RECR2093 Inclusive and Special Recreation (Sp)** An introduction to the basic concepts of inclusive and special recreation services integrated with knowledge and skill sets required to provide accessible recreation and leisure programming for people with disabilities.

**RECR2813 Leadership Techniques in Recreation (Fa)** Development of knowledge related to leadership theory, group dynamics, and face-to-face leadership techniques. Students gain an understanding of leadership theories as they are applied in a field setting.

**RECR2853 Leisure and Society (Sp, Su, Fa)** This course is an examination of leisure and its effect on society. Course content includes identification and exploration of motivating factors related to various traditional and contemporary leisure expressions as it occurs across diverse populations.

**RECR2853H Honors Leisure and Society (Sp, Su, Fa)** This course is an examination of leisure and its effect on society. Course content includes identification and exploration of motivating factors related to various traditional and contemporary leisure expressions as it occurs across diverse populations.

**RECR3012 Officiating Basketball, Softball, and Baseball (Irregular)** Provide the individual with the basic knowledge of sport rules and mechanics of officiating basketball, softball, and baseball.

**RECR3023 Sport Management Fundamentals (Fa)** This course is designed to present an overview of the fundamentals of sport management in professional and intercollegiate sport, as well as issues facing sport organizations and how management techniques can be applied to solve sport business problems. A description of career opportunities in sport will be presented with special interest in helping the student design a course of study that best meets his/her goals. Prerequisite: RECR 1003.

**RECR3833 Program Planning in Recreation (Sp)** Development of the fundamentals of program planning using modern techniques of identifying and analyzing program activity areas and community needs. Includes program development and application with a variety of population groups and representative leisure service areas.

**RECR3843 Planning, Design, and Maintenance for Recreation (Sp)** Planning concepts, design principles, and maintenance techniques are emphasized. Also, technical design concepts and firsthand experiences in maintenance of facilities are included.

**RECR3873 Sport and Recreation Risk Management (Sp)** In-depth look at risk management and related legal issues affecting recreation and sport administration. Prerequisite: RECR 3833 and junior standing. (Same as HESC 3623)

**RECR4003 Innovative Practices in Recreation (Fa)** Management techniques for recreation programs and facilities.

**RECR4013 Contemporary Issues in Leisure (Sp)** Discussion of selected topics and review of current literature in the recreation field. Analysis of current trends and professional issues are emphasized. Certification at the instructor level or higher in at least 2 areas of expertise must be completed before a grade is assigned in this course. Prerequisite: Senior standing.

**RECR405V Independent Study in Recreation (Sp, Su, Fa) (1-3)** Provides student an opportunity to pursue special study of research problems.

**RECR4083 Research and Evaluation in Recreation (Sp)** An introduction to the applied methods and techniques of research and evaluation in leisure studies and services. General consideration given to research applications such as needs assessment, program evaluation, and marketing studies. Emphasis placed on the logic underlying the research process.

**RECR440V Internship (Sp, Su, Fa) (1-12)** This experiential based course requires 40 hours per week of work in an approved agency for a full semester. It is recommended that students register for the summer session after completion of their course work. Prerequisite: RECR 3873.

**RECR480V Workshop (Irregular) (1-3)** May be repeated for up to 3 hours of degree credit.

**RECR4923 Outdoor Adventure Leadership (Su)** This course considers the scope of outdoor recreation programs, leadership and skill development with practical experience in a wilderness environment. The course will include a canoe trip through the wilderness, and skill training in such areas as orienteering and rock climbing; and leadership development in interpersonal and processing skills.

**RECR5003 Graduate Prerequisites (Fa)** Gives students entering a recreation degree program with no course background in recreation the necessary understanding of the recreation field. This course will not count toward a graduate degree in recreation.

**RECR5273 The Intramural Sports Program (Odd Years, Fa)** Historical development, aim and objectives, organization, administration, units of competition, program of activities, schedule making, scoring plans, rules and regulations, awards, and special administrative problems.

**RECR5293 Sports Management (Fa)** Deals primarily with high school athletics and considers historical development, objectives, controlling agencies, eligibility and contest regulations, local organization and administration, staff program, finances, inventories, facilities and equipment, safety, legal aspects, awards, publicity, and public relations.

**RECR5473 Techniques in Therapeutic Recreation (Irregular)** Advances the student's understanding and application of therapeutic recreation techniques. It provides knowledge and the opportunity to apply skills for the student to gain competencies necessary for the provision of therapeutic recreation services. Prerequisite: RECR 4093.

**RECR5483 Treatment Planning in Therapeutic Recreation (Irregular)** Prepares students with the skills and understanding to apply the "TR Process" (assessment, planning, implementation, evaluation) in the development of individual client treatment plans in Therapeutic Recreation. Prerequisite: RECR 4093.

**RECR5493 Trends and Issues in Therapeutic Recreation (Irregular)** Advances the student's knowledge of issues and concerns that moderate therapeutic recreation services to the client. The student is expected to critically examine and discuss each issue in an effort to develop a sound, practical philosophy of therapeutic recreation. The ultimate goal is to prepare the student to enter the profession confident in his or her ability to provide exemplary services. Prerequisite: RECR 4093.

**RECR560V Workshop (Irregular) (1-3)** May be repeated for up to 3 hours of degree credit.

**RECR574V Internship (Irregular) (1-3)**

**RECR5813 Principles of Recreation (Su)** Considers history, philosophy, current trends, basic issues, and fundamental principles of recreation. Using these principles as basic criteria, students make critical appraisals of current practices in organization and administration of recreation programs, program content, leadership methods, and evaluative procedures.

**RECR5833 Recreation for Special Populations (Irregular)** Skills, knowledge, and concepts within recreation which are appropriate to planning and implementing recreation programs and services for the handicapped.

**RECR5843 Tourism (Even Years, Fa)** Explores major concepts of tourism to discover what makes tourism work, how tourism is organized, and its social and economic effects.

**RECR5853 The School and Community Recreation Program (Sp)** Nature, background, significance, and trends in recreation in the school and community. Attention is given to departmental organization, administrative practices, program financing, personnel, safety, and legal aspects.

**RECR5883 Recreation Services Promotion (Fa)** Examines specific strategies for promoting recreation programs in the local community.

**RECR5893 Field Work in Recreation (Sp, Su, Fa)** Provides practical work experience in recreation programs and the opportunity to study special programs under the supervision of specialists.

**RECR600V Master's Thesis (Sp, Su, Fa) (1-18)**

**RECR605V Independent Study (Sp, Su, Fa) (1-3)** May be repeated for up to 3 hours of degree credit.

**RECR612V Directed Reading in Recreation (Sp, Su, Fa) (1-3)** Critical analysis of literature in the area of recreation.

**RECR6533 Legal and Political Aspects (Sp)** An overview of major legislation affecting HKRD professions; how to operate within these laws; and methods for influencing new legislation. Also discusses political aspects of professions both outside and inside government agencies.

**RECR674V Internship (Sp, Su, Fa) (1-3)** Students will learn diverse teaching techniques and implement them in an on-going undergraduate recreation class serving as the teaching laboratory. The "what" "when" and "how" relative to integrating various teaching techniques with specific content areas in the class will be explored by both the student and the instructor.

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## Rehabilitation Education (RHAB)

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**RHAB5333 Counseling Persons Who Are Deaf or Hard of Hearing (Sp, Fa)** Focuses on the application of basic principles underlying all forms of therapeutic interaction to professional counseling practices with individuals who are deaf or hard of hearing.

**RHAB534V Supervised Rehabilitation Counseling (Sp, Su, Fa) (1-3)** Gives the student practice in counseling under supervision with rehabilitation clients in selected settings and agencies.

**RHAB5353 Hearing Impairment and Human Behavior (Sp, Fa)** Focuses on an interdisciplinary study of the impact for profound hearing loss on the educational, psychological, social, and vocational functioning of persons who are deaf or hard of hearing.

**RHAB5363 Employer Relations and Placement Practicum (Sp, Su, Fa)** Students address the placement needs of rehabilitation agencies and their clients by implementing the RehabMark approach to employer development. Prerequisite: RHAB 5493.

**RHAB5373 Multicultural/Gender Issues in Rehabilitation (Su)** This course examines multicultural and gender issues of importance to rehabilitation practice and research, including study of women and men with disabilities within different minority cultures. The course uses a power analysis and a minority model of disability as a basis for understanding the relationship between disability, gender, race and ethnicity.

**RHAB5423 Vocational Rehabilitation Foundations (Fa)** Survey of the philosophy of vocational rehabilitation, including history and legislation.

**RHAB5433 Medical Aspects of Disability (Sp)** Orientation to medical and medically related aspects of various disabling conditions with emphasis on the severely disabled.

**RHAB5443 Rehabilitation Case Management (Sp)** Counseling process in the rehabilitation setting. Focusing upon effective counseling strategies, representative cases, and effective case management methods.

**RHAB5453 Psychological Aspects of Disability (Sp)** Intensive study of the psychological aspects of adjustment to atypical physique and prolonged handicapping condition.

**RHAB5463 Independent Living and Community Adjustment (Fa)** Study of the problems and practices involved in developing and maintaining independent living rehabilitation programs for people who are disabled physically, developmentally, and mentally.

**RHAB5473 Placement of Persons with Disabilities (Su)** Focuses on placement theory and practice as they apply to persons who experience disabilities. Special attention is given to RehabMark approach.

**RHAB5483 Rehabilitation Counseling Research (Fa)** An in-depth examination of rehabilitation research methodology and issues to prepare students to critically evaluate and use rehabilitation counseling research in their professional practice.

**RHAB5493 Vocational Evaluation and Adjustment (Sp)** An in-depth examination of theories and techniques related to evaluation of vocational potential and work adjustment of people with disabilities.

**RHAB574V Internship (Sp, Su, Fa) (1-9)**

**RHAB599V Seminar (Sp, Su, Fa) (1-18)** May be repeated for up to 18 hours of degree credit.

**RHAB605V Independent Study (Sp, Su, Fa) (1-18)**

**RHAB6203 Disability Policy in the U.S. (Fa)** An analysis of public policy approaches to disability in the U.S. Examines the political and philosophical origins of disability policy; reviews major disability legislation and its effects on policy stakeholders; describes recent initiatives; and analyzes evolution of disability policy within context of changing societal, economic, and political conditions.

**RHAB6213 Advanced Psychosocial Aspects of Disability (Fa)** A theoretical and applied study of techniques that enable people to cope with 2 major life events: disability and unemployment.

**RHAB6233 Employment Practices and Interventions (Sp)** An intensive study of the employment experiences of workers with disabilities with emphasis on disincentives and barriers to employment and interventions to enable people with disabilities to participate in employment. Prerequisite: RHAB 5493 or equivalent.

**RHAB6243 Advanced Rehabilitation Research (Sp)** An advanced doctoral level course to facilitate the application of scientific values, research skills, and behavior to the generation of rehabilitation knowledge and problem solving.

**RHAB625V Teaching Internship in Rehabilitation (Sp, Su, Fa) (1-18)** Graduate teaching experience in the rehabilitation counseling curriculum. Under the supervision of a faculty member, will participate in the development of syllabi, course materials and examinations. Will team teach graduate rehabilitation courses with the faculty member. May be repeated for up to 18 hours of degree credit.

**RHAB6263 Clinical Supervision of Practicum Students (Su)** The study and practice of supervising master's rehabilitation counseling students in a clinical practicum setting. Prerequisite: Doctoral standing.

**RHAB675V Internship (Sp, Su, Fa) (1-18)** Advanced super-

vised practice in a rehabilitation setting.

**RHAB699V Seminar (Sp, Su, Fa) (1-18)** Discussion of pertinent topics and issues in the rehabilitation field. Prerequisite: Advanced graduate standing. May be repeated for up to 18 hours of degree credit.

**RHAB700V Doctoral Dissertation (Sp, Su, Fa) (1-18)**  
Prerequisite: Candidacy.

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## Rural Sociology (RSOC)

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**RSOC2603 Rural Sociology (Sp)** Meaning of sociology and sociological concepts with reference to rural society; interdependence of rural and urban population in ecological areas; institutions; social change and adjustment.

**RSOC4603 Environmental Sociology (Sp)** The course provides a social perspective on environmental issues. It examines the linkage between society, ecological systems and the physical environment. It provides conceptual framework(s) for analyzing environmental issues, considers the role of humans in environmental issues, and enhances understanding the complexity of the relationship between societal organization and environmental change. (Same as SOCI 4603)

**RSOC500V Special Problems (Sp, Su, Fa) (1-6)** Gives experience in executing research and in analyzing a sociological problem of agriculture. Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**RSOC600V Master's Thesis (Sp, Su, Fa) (1-6)** Prerequisite: Graduate standing.

**RSOC700V Doctoral Dissertation (Sp, Su, Fa) (1-18)**

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## Russian Studies (RSST)

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**RSST4003H Honors Russian Studies Colloquium (Sp)** May be repeated for up to 3 hours of degree credit.

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## Russian (RUSS)

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**RUSS1003 Elementary Russian I (Fa)**

**RUSS1013 Elementary Russian II (Sp)** Elementary courses stress correct pronunciation, aural comprehension, and simple speaking ability, and lead to active mastery of basic grammar and limited reading ability.

**RUSS2003 Intermediate Russian I (Fa)** Intermediate courses stress correct pronunciation, aural comprehension, and simple speaking ability, and lead to active mastery of basic grammar and limited reading ability.

**RUSS2013 Intermediate Russian II (Sp)** Continued development of basic, speaking comprehension and writing skills and intensive development of reading skills.

**RUSS3013 Introduction to Literature (Fa)** Development of reading skills and introduction to literary analysis. Prerequisite: RUSS 2013 or equivalent.

**RUSS3023 Listening Comprehension (Sp)** Provides intensive practice in listening to recordings taken from such sources as television broadcasts, lectures, and readings of literature. This is supplemented by conversation and by comprehension tests. Prerequisite: RUSS 2013 and RUSS 3013.

**RUSS4123 Survey of Russian Literature from Its Beginning to the 1917 Revolution (Fa)** The instructor will discuss the historical and cultural backgrounds while focusing on major writers and will deal with literature as an outlet for social criticism. There will be textual analysis. It will be taught in English. (Same as WLIT 4123)

**RUSS4133 Survey of Russian Literature Since the 1917 Revolution (Odd Years, Sp, Fa)** The instructor will discuss the historical and cultural backgrounds while focusing on major writers and will deal with literature as an outlet for social criticism. There will be textual analysis. It will be taught in English with readings in English. (Same as WLIT 4133)

**RUSS475V Special Investigations (Sp, Fa) (1-6)**

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## Social Work (SCWK)

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**SCWK2133 Introduction to Social Work (Sp, Su, Fa)** Introduction to social work as a profession and to social welfare institutions from the perspective of the generalist, entry level social worker. Emphasis on empowerment function of social work.

**SCWK3163 On Death and Dying (Sp, Su, Fa)** Reviews the theory and humanistic importance of the concepts of death and dying in society. An experimental option and interdisciplinary faculty presenters will be part of the format. (Same as HUMN 3163)

**SCWK3193 Human Diversity and Social Work (Sp, Su, Fa)** An introduction to information basic concepts related to human diversity and social work. Provides content on differences and similarities in the experiences, needs, and beliefs of people distinguished by race, ethnicity, culture, class, gender, sexual orientation, religion, physical or mental ability, age or national origin.

**SCWK3233 Juvenile Delinquency (Sp, Su, Fa) Nature,**

causes, extent, and methods of treatment of juvenile delinquency.

**SCWK3533 Legal Aspects of Social Welfare (Fa)** Study of a selected group of legal regulations encountered by the social worker, including the court system, legal rights of indigent persons and children, domestic relations, problems of the small wage earner, and health measures. Prerequisite: Junior standing.

**SCWK3633 Problems of Child Welfare (Sp, Su, Fa)** Study of the needs of deprived children with some attention to methods and standards of care. Cultural competence and family-centered practice are emphasized.

**SCWK399VH Honors Course (Irregular) (1-18)** Prerequisite: Junior standing. May be repeated for up to 12 hours of degree credit.

**SCWK405V Special Topics in Social Work (Irregular) (1-6)** Comprehensive study of various topics of importance in contemporary social welfare and social work practice. Prerequisite: Junior standing.

**SCWK4073 Social Work Research and Technology I (Sp, Fa)** An overview of forms and sources of social work research including existing social data, techniques for collecting original social data, and techniques of organization, interpretation, and presentation of data. Students will also become proficient in the use of current technology for social work research and practice. Pre- or Corequisite: One of the following: STAT 2303, SOCI 3303/3301L, PSYC 2013, or EDFD 2403. Prerequisite: Computer literacy.

**SCWK4093 Human Behavior and the Social Environment I (Sp, Fa)** (Formerly SCWK 3093) Provides a conceptual framework for knowledge of human behavior and the social environment with a focus on individuals. Social systems, life-course, assets, and resiliency-based approaches are presented. Special attention is given to the impact of discrimination and oppression on the ability to reach or maintain optimal health and well-being. Prerequisite: PSYC 2003, SOCI 2013, SCWK 2133, and SCWK 3193 and (BIOL 1543 and BIOL 1541L, or ANTH 1013 and ANTH 1011L).

**SCWK4103 Human Behavior and the Social Environment II (Sp, Fa)** (Formerly SCWK 3103) This course applies the basic framework for creating and organizing knowledge of human behavior and the social environment acquired in HBSE I to the understanding of family, group, organizational, community, and global systems. Attention is given to discrimination, oppression, the impact of technology, and poverty at each system level. Prerequisite: SCWK 4093 and SCWK 4153.

**SCWK4143 Addiction and the Family (Sp)** Introduction to the biophysical basis of chemical and behavior compulsions with special focus on family impacts. Childhood development within addictive families is also examined. Social work intervention with substance abusing families is highlighted.

**SCWK4153 Social Welfare Policy (Sp, Fa)** (Formerly SCWK 3153) Describes and analyzes the policies and services rendered by local, state, regional, national, and international agencies as well as the policy implications for social work practice. Students prepare to advocate social policy changes designed to improve social conditions, promote social and economic justice, and to empower at-risk populations. Prerequisite: PLSC 2003, SCWK 2133, and SCWK 3193.

**SCWK4183 Elderly Citizen (Sp, Fa)** Survey of theories of gerontology, service programs and unmet needs of the aging citizen.

**SCWK4233 Seminar: Children and Family Services (Fa)** An examination of selected current issues in the field of children and family services through discussion, individual study, and interaction with professionals in the field.

**SCWK4333 Social Work Practice I (Sp, Fa)** This is the first in the sequence of practice courses introducing students to the generalist approach to micro social work. This course focuses on developing a solid foundation for practice with individuals, including learning basic communication and helping skills, values, principles, and the connection of theory to practice. Pre- or Corequisite: SCWK 4093 and SCWK 4153.

**SCWK4343 Social Work Practice II (Sp, Fa)** This is the second course in the social work practice sequence, emphasizing theories, models, and techniques related to generalist practice with families and groups. The course elaborates on system theory as it impacts groups and families, and use of experiential teaching methods. Pre- or Corequisite: SCWK 4103 and SCWK 4333.

**SCWK4412 Field Seminar I (Sp, Su, Fa)** An integrative seminar to assist students in comparing their practice experiences, integrating knowledge acquired in the classroom, and expanding knowledge beyond the scope of the practicum setting. Corequisite: SCWK 4434 and social work majors only.

**SCWK4422 Field Seminar II (Sp, Su, Fa)** An integrative seminar to assist students in comparing their practice experiences, integrating knowledge acquired in the classroom, and expanding knowledge beyond the scope of the practicum setting. Corequisite: SCWK 4444. Prerequisite: SCWK majors only.

**SCWK4434 Social Work Internship I (Sp, Su, Fa)** Arranged in connection with social service agencies. Credit is based on completion of all course objectives, including a minimum of 225 hours of field work under the supervision of a licensed social worker.

Corequisite: SCWK 4412. Prerequisite: Social work major, SCWK 4073, SCWK 4103, and SCWK 4333.

**SCWK4444 Social Work Internship II (Sp, Su, Fa)** Arranged in connection with social service agencies. Credit is based on completion of all course objectives, including a minimum of 225 hours of field work under the supervision of a licensed social worker. Corequisite: SCWK 4422. Prerequisite: SCWK majors only, SCWK 4343, SCWK 4733 and SCWK 4434.

**SCWK4733 Social Work Practice III (Sp, Fa)** Students acquire and practice the skills, knowledge, and values necessary for culturally competent generalist social work practice with organizations and communities. Special attention is given to the implications of discrimination and oppression for attaining social and economic justice. Pre- or Corequisite: SCWK 4343. Prerequisite: SCWK 4103 and SCWK 4333.

**SCWK496V Independent Study (Sp, Su, Fa) (1-6)** Independent Study designed to meet the particular needs of individual students. May be repeated for up to 6 hours of degree credit.

**SCWK5003 Foundations of Culturally Competent Social Work Practice (Fa)** The purpose of this course is the acquisition and demonstration of beginning graduate-level social work values and ethics, knowledge, and skills necessary for cultural competence in work with individuals, families, groups, organizations, communities, and global contexts. A multi-systems life-course conceptual framework is used. Prerequisite: Admission to the two-year or part-time MSW program.

**SCWK5013 Bridge Course: Evidenced Based Social Work (Su)** This course prepares advanced standing MSW students for graduate study. Students will become familiar with the mission and conceptual framework undergirding the School of Social Work, become familiar with and choose an area of emphasis, and develop beginning knowledge of diagnosis. Corequisite: SCWK 5444 and SCWK 5442. Prerequisite: Admission into the advanced standing MSW program.

**SCWK5073 Social Work Research and Technology II (Fa)** This course includes content necessary for thesis proposal development. A significant component for this course focuses on using research tools to begin the thesis. The course provides an orientation to participatory action research, and to the scientific and systematic evaluation of service delivery and personal professional practice. Corequisite: SCWK 6000L and SCWK 6003. Prerequisite: Completion of year one for two-year students or summer semester for advanced standing students.

**SCWK5143 Global Social and Economic Justice and Oppression (Fa)** The role and responsibilities of the social work profession are examined in an international comparative context. Particular emphasis is given to social workers' responsibilities to advance global social and economic justice and reduce human oppression through community, social, economic, and organizational development strategies. Prerequisite: SCWK 5003 or SCWK 5013.

**SCWK5153 Children, Youth, and Family (Sp, Su, Fa)** This course focuses on the development, revision, and impact of policy and practice in children, youth, and family services. Current issues in policy and practice will be examined. Students will interact with community agencies and utilize class assignments to advocate improvements in current policy and practice. Prerequisite: SCWK 5003 or SCWK 5013.

**SCWK5163 Social Work Management, Administration and Supervision (Sp, Su)** This course develops advanced skills in management, administration, and supervision in social work organizations. Emphasis is placed on developing leadership skills in ethics, budgeting, finance, resource development, information management, evaluation, staff hiring, supervision and development, and the use of technology in organizational leadership, development, and maintenance. Prerequisite: Graduate standing and SCWK 5003 or SCWK 5013.

**SCWK5173 Advanced Practice with Families and Couples (Fa)** The purpose of this course is to provide advanced understanding of the knowledge, skills and values needed to assess and intervene effectively with traditional and non-traditional families and couples. The course will examine social systems and life-course strengths approaches to understand how families and couples function. Students will design interventions. Prerequisite: SCWK 5003 or SCWK 5013.

**SCWK5183 Advanced Practice with Individuals (Sp)** This course develops advanced skills in social work practice on a micro level. Students learn to analyze and compare practice models. They gain skills in selecting a practice model and integrating multiple models based on client needs. Prerequisite: SCWK 5003 or SCWK 5013.

**SCWK5193 Advanced Practice and Policy in Aging (Fa)** This course focuses on social work practice with, and policies for, older persons. Current, past, and future practices and policies for older persons across systems and the life course are explored. Emphasis is placed on the influences of personal, social, economic, and cultural diversity on the well-being of older persons. Prerequisite: SCWK 5003 or SCWK 5013.

**SCWK5213 Advanced Practice and Policy in Mental Health (Sp)** This advanced course prepares students to identify mental disorders, plan intervention strategies with clients from a strengths perspective, and understand mental health programs and policies through which services are delivered. Differential diagnosis and the impact of socioeconomic status, gender, race, and sexual orientation on diagnosis and treatment decisions are addressed. Prerequisite: SCWK 5003 or SCWK 5013.

**SCWK5223 Advanced Practice and Policy in Health Care (Fa)** This course examines the delivery of health care in the United States in the context of social, political, economic, ethical, and legal factors. Students gain skills for collaboration on an interdisciplinary team. Prerequisite: SCWK 5003 or SCWK 5013.

**SCWK5233 Advanced Technology for Social Work (Fa)** This course develops advanced skills in the critical evaluation and use of information technologies for social work practice. Emphasis is placed on using technological advances to enhance the effectiveness of social work practice across multiple systems, and developing skills for life-long learning about technologies in a rapidly changing information age. Prerequisite: SCWK 5003 or SCWK 5013.

**SCWK5253 Spirituality in Social Work (Sp, Fa)** This course provides a framework of knowledge, values, skills and experiences for spiritually-sensitive social work practice. It prepares students to respond competently and ethically to diverse spiritual and religious perspectives by using a comparative, critically reflective approach to content. Prerequisite: SCWK 3103 or SCWK 5003 or SCWK 5013.

**SCWK5343 Advanced Practice with Groups (Sp, Su)** This course provides advanced knowledge, skills, and values needed to assess and intervene effectively with populations seen in the social work practice of group therapy. This course examines group dynamics, life-course and strengths perspectives, and client-centered assessment of needs and their application in agency settings. Prerequisite: SCWK 5003 or SCWK 5013.

**SCWK5412 Foundation Field Seminar (Sp)** A required course for MSW students without an accredited undergraduate degree in social work. The purpose of the seminar is to allow students to integrate classroom content with experiences in the field, to learn peer supervision and consultation, and to learn from the experiences of other students in the field. Corequisite: SCWK 5434.

**SCWK5434 Foundation Field Internship (Sp)** This course is required of all graduate students entering the MSW program without an accredited undergraduate degree in social work. Minimum of 330 clock hours of agency-based professional social work practicum experience, supervised by a licensed MSW, is required. Corequisite: SCWK 5412. Prerequisite: SCWK 5003, SCWK 4333, SCWK 4073, SCWK 4093, and SCWK 4153.

**SCWK5442 Field Seminar III (Su)** This seminar is required of all graduate students entering the MSW program with advanced standing. Students integrate classroom content with experiences in the field, learn peer supervision and consultation, and learn from the experience of other students in the field. Corequisite: SCWK 5444. Prerequisite: Admission to graduate program with advanced standing.

**SCWK5444 Field Internship III (Su)** This course is required of all graduate students entering the MSW program with advanced standing. A minimum of 240 clock hours of agency-based professional social work practicum experience, supervised by a licensed MSW, is required. Corequisite: SCWK 5442. Prerequisite: Admission to graduate program with advanced standing.

**SCWK6000L Thesis Laboratory (Sp, Su)** This laboratory is required for completion of the thesis, which is developed through components of the graduate Research & Technology sequence. Other courses in the graduate curriculum provide support for the conceptualization and development of the thesis. This laboratory is taken in conjunction with SCWK 5073 and SCWK 6073. Corequisite: SCWK 5073 and SCWK 6073.

**SCWK6003 Advanced Practice I Using the Multi-System Life Course Perspective (Fa)** In this first course of a two-semester sequence, students select a community problem, provide services to clients, and address the problem through policy analysis. A review of literature regarding theory and practice, paradigm analysis, development of a practice model, and implementation of micro and mezzo interventions in the field are examined. Corequisite: SCWK 6444, SCWK 6442, and SCWK 5073.

**SCWK6013 Advanced Practice II Using the Multi-System Life Course Perspective (Sp)** In this second of a two-course sequence students provide services to social work clients. This course covers application of life course theory and multi-system and diversity perspectives. Issues across the life course are considered in addressing interventions through program development, a grant proposal submission, and implementation of macro interventions. Corequisite: SCWK 6073, SCWK 6454, and SCWK 6452. Prerequisite: SCWK 6003.

**SCWK6073 Social Work Research and Technology III (Sp)** In this final research course, students collect and analyze data as planned in the thesis proposal submitted for Research and Technol-

ogy II. Course content focuses on the advanced research skills necessary to complete the thesis. Students write a research report of their findings and submit it for publication. Corequisite: SCWK 6013 and SCWK 6000L. Prerequisite: SCWK 5073.

**SCWK6442 Advanced Field Seminar I (Fa)** The first of two advanced field seminars required of all students in the MSW program. The purpose of the seminar is to allow students to integrate classroom content with experiences in the field, to practice peer supervision and consultation, and to learn from the experiences of other students in the field. Corequisite: SCWK 6444. Prerequisite: SCWK 5412 or SCWK 5442.

**SCWK6444 Advanced Field Internship I (Fa)** This is the first of two advanced field internships required of all graduate students in the MSW program. A minimum of 330 clock hours of agency-based professional social work practicum experience, supervised by a licensed MSW, is required. Corequisite: SCWK 6442. Prerequisite: SCWK 5434 or SCWK 5444.

**SCWK6452 Advanced Field Seminar II (Sp)** This is the second of two advanced field seminars required of all students in the MSW program. The purpose of the seminar is to allow students to integrate classroom content with experiences in the field, to demonstrate peer supervision and consultation, and to learn from the experiences of other students in the field. Corequisite: SCWK 6454. Prerequisite: SCWK 6442.

**SCWK6454 Advanced Field Internship II (Sp)** This is the second of two advanced Field Internship courses required of all graduate students in the MSW program. A minimum of 330 clock hours of agency-based professional social work practicum experience supervised by a licensed MSW is required. Corequisite: SCWK 6452. Prerequisite: SCWK 6442.

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## Sociology (SOCI)

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**SOCI2013 General Sociology (Sp, Su, Fa)** Group relations, culture, personality, social institutions, collective behavior, and social change.

**SOCI2013H Honors General Sociology (Sp, Su, Fa)** Group relations, culture, personality, social institutions, collective behavior, and social change.

**SOCI2033 Social Problems (Sp, Su, Fa)** Social disorganization, social strains, and deviant behavior, including consideration of war, poverty, ethnic relations, delinquency, drug addiction, mental illness, and population problems.

**SOCI2043 Marriage and the Family (Fa)** A sociological analysis of courtship, marriage, and parenthood patterns including gender relations in and diverse forms of contemporary American families.

**SOCI3013 Population and Society (Odd Years, Sp)** The social significance of population; population distribution and composition; population trends; and problems of the population.

**SOCI3023 Criminology (Sp, Su, Fa)** A survey of theories of crime causation, development of law, corrections, victimization, and police and policy. Prerequisite: SOCI 2013 or SOCI 2033. (Same as CMJS 3023)

**SOCI3043 Contemporary Caribbean (Sp)** The background, development, social organization, problems, and prospects of the contemporary people of the Caribbean Islands and related territories.

**SOCI3103 Religion and Society (Sp)** Comparative study of religious organization, beliefs, practitioners, and rituals. Examination of major social science issues in the study of religion.

**SOCI3153 Urban Sociology (Fa)** The processes of urbanization; the nature of urban social organization; the impact of urban culture on non-urban society; implications for policy and planning; including study of foreign as well as American communities. Prerequisite: SOCI 2013.

**SOCI3193 Race, Class, and Gender in America (Fa)** Introduction to sociological theories and research on social inequality in the United States. Course focuses on the three prominent lines of social division in this society: class, gender, and race. Prerequisite: SOCI 2013.

**SOCI3203 Corrections (Fa)** A study of the origins, development, and practices related to corrections, including incarceration, community corrections and supervision, and intermediate sanctions. Prerequisite: CMJS 2003. (Same as CMJS 3203)

**SOCI3223 Social Psychology (Fa)** Current theories and research in social interaction, with emphasis on symbolic processes, role theory, theories of interpersonal behavior, socialization, and the relation of institutional structures to individual behavior. Prerequisite: SOCI 2013.

**SOCI3253 Cultures of the South (Sp)** Survey of the diverse ethnic and racial groups of the American South with special emphasis on social and cultural traits related to contemporary developments. (Same as ANTH 3253, PLSC 3273)

**SOCI3301L Social Data and Analysis Laboratory (Sp, Fa)** Applied statistics lab to accompany SOCI 3303. Corequisite: SOCI 3303.

**SOCI3303 Social Data and Analysis (Sp, Fa)** An introduction

to descriptive and inferential statistics with special emphasis on those techniques most commonly used in social research. Corequisite: SOCI 3301L. Prerequisite: SOCI 2013.

**SOCI3313 Social Research (Sp, Fa)** Study and experience in current methods of social research with emphasis on sociological measurement and design. Prerequisite: SOCI 2013 and SOCI 3303.

**SOCI3723 Deviant Behavior (Fa)** Prevalence, theories, stereotypical responses, and treatment programs for behaviors such as vagrancies, alcoholism, violence, and sexual deviancy which deviate from social norms.

**SOCI399VH Honors Course (Sp, Fa) (1-6)** Prerequisite: junior standing. May be repeated for up to 12 hours of degree credit.

**SOCI4003 Internship in Sociology (Sp, Su, Fa)** (Formerly SOCI 4006) Supervised experience in municipal, county, or state agencies, or any other agency which is approved by the instructor. Prerequisite: SOCI 2013.

**SOCI4013 Special Topics in Sociology (Sp, Su, Fa)** Designed to cover specialized topics not usually presented in depth in regular courses. Prerequisite: SOCI 2013. May be repeated for up to 6 hours of degree credit.

**SOCI4023 Social Theory (Fa)** Nineteenth and 20th century sociological theory. Present-day currents in sociology are studied and related to political, philosophical, and psychological contemporary thought. Prerequisite: SOCI 2013 and junior standing.

**SOCI403V Individual Study in Sociology (Sp, Su, Fa) (1-3)** A reading and conference course on special topics in sociology for advanced students.

**SOCI4043 Seminar in Sociology (Sp)** Prerequisite: Senior standing.

**SOCI4063 Organizations in Society (Fa)** An introduction to the study of organizations; provides a broad overview of issues and problems related to organizations in society. Prerequisite: SOCI 2013.

**SOCI4073 Peoples of East Africa (Fa)** The major institutional structures, dynamics and problems of the Africans, Asians, and Europeans of contemporary Uganda, Kenya, Tanzania, Somalia, Sudan, and Ethiopia. Prerequisite: SOCI 2013.

**SOCI4123 Black Ghetto (Sp, Fa)** The origin, continuity, problems, and personalities, of the Black American community and its contributions to national and international life. Prerequisite: SOCI 2013.

**SOCI4133 The Family (Sp)** A sociological analysis of the interactions and relationships which constitute the family as a group and as an institution, to include issues of gender and family diversity. Prerequisite: SOCI 2013 or SOCI 2033.

**SOCI4603 Environmental Sociology (Sp)** The course provides a social perspective on environmental issues. It examines the linkage between society, ecological systems and the physical environment. It provides conceptual framework(s) for analyzing environmental issues, considers the role of humans in environmental issues, and enhances understanding the complexity of the relationship between societal organization and environmental change. (Same as RSOC 4603)

**SOCI5001 Proseminar (Fa)** An informal forum for graduate students and faculty to present and discuss ongoing research interests as well as the current state of the discipline. Prerequisite: Graduate standing.

**SOCI500V Advanced Problems in Sociology (Sp, Su, Fa) (1-3)** Individual research on problems or problem areas. Prerequisite: Graduate standing.

**SOCI5013 Advanced Social Research (Fa)** Supervised field experience and other projects in social research. Prerequisite: SOCI 3301L, SOCI 3303, and SOCI 3313 or instructor consent.

**SOCI503V Special Topics (Irregular) (1-6)** Designed to cover specialized topics not usually presented in depth in regular courses. Prerequisite: Graduate Standing. May be repeated for up to 6 hours of degree credit.

**SOCI5043 Public Policy, Children and Families (Sp)** The study of the impact of public policy on children and families, and the ways in which policies are created, modified, and changed. Includes the history of public policy concerning children and families.

**SOCI5083 Methods of Field Research (Fa)** An introduction to research strategies including intensive interviewing, participant observational fieldwork, content analysis, historical analysis, and comparative research. Emphasis on the practical aspects of designing and executive research involving multiple methods of data gathering and analysis. Prerequisite: Graduate standing.

**SOCI5113 Seminar in Social Inequality (Fa)** Major theories of stratification; types of stratification systems, comparisons of modern and traditional systems; emergent trends. Prerequisite: Graduate standing.

**SOCI5133 The Community (Even years, Sp)** A sociological analysis of the theory, methods and materials used in the study of the community. Prerequisite: Graduate standing.

**SOCI5153 Sociological Perspective on Social Psychology (Sp)** Principles, concepts and methods used in analyzing effects of social structures and processes on the self and interaction. Topics

include exchange theory, role analysis, symbolic interactionism, social construction of reality, socialization, interpersonal competence, organizational and leadership development, social dislocation, and stress. Prerequisite: Graduate standing.

**SOCI5233 Theories of Deviance (Irregular)** A survey of major theories-classical, developmental, ecological, functionalist, conflict, subcultural, control, and phenomenological-explaining morally condemned differences in society. Particular emphasis is on practical implications of each perspective for policy and social control. Prerequisite: Graduate standing.

**SOCI5253 Classical Social Theory (Fa)** A survey of social theory up to the late 20th century. An introduction to the classical sociological themes that continue to inform research, analysis, and policy formation. Major issues will include the relationship between the individual and the community, and the sources of stability, conflict, and change. Prerequisite: Graduate standing.

**SOCI5263 Contemporary Social Theory (Sp)** Analysis of contemporary social theories & major theoretical debates. Emphasis is on critical evaluation & application of theoretical perspectives to current social issues affecting families and communities. Prerequisite: SOCI 5253.

**SOCI5311L Applied Data Analysis Laboratory (Sp)** Provides instruction for data transformations required for the advanced statistical procedures used in the Statistical Package for the Social Sciences (SPSS). Also provides instruction in the use of advanced statistical procedures covered in SOCI 5313. Prerequisite: SOCI 3303 and SOCI 3301L or an equivalent course in statistics.

**SOCI5313 Applied Data Analysis (Sp, Fa)** Covers basic concepts and applications of the general linear model to a variety of sociological research issues and problems. Also provides an introduction to binary dependent and multivariate categorical data analysis for sociological research. Prerequisite: SOCI 3303 and SOCI 3301L and SOCI 5013. Familiarity with statistical computer programs is assumed.

**SOCI5503 Research Internship (Sp, Fa)** Supervised research experience in field setting. Prerequisite: Graduate standing.

**SOCI600V Master's Thesis (Sp, Su, Fa) (1-6)**

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## Space and Planetary Sciences (SPAC)

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**SPAC300V Space & Planetary Sciences Research (Irregular) (1-3)** This course covers research in space and planetary sciences performed by undergraduate students in the University. Prerequisite: Junior Standing and Instructor Consent. May be repeated for up to 6 hours of degree credit.

**SPAC400VH Honors Research in Space & Planetary Sciences (Sp, Su, Fa) (1-3)** This course covers research in space and planetary sciences performed by honors undergraduate students. Prerequisite: Junior standing and registration in an honors program. Corequisite: SPAC 4011H. May be repeated for up to 3 hours of degree credit.

**SPAC4013H Honors Colloquium in SPAC (Fa)** Research seminar for honors students engaged in undergraduate research in the space and planetary sciences. Prerequisite: Junior standing and registration in an honors program. May be repeated for up to 6 hours of degree credit.

**SPAC5033 Planetary Systems (Odd years, Fa)** The nature of the solar system and other planetary systems as deduced from observations and theoretical modelling. Structure and evolution of terrestrial and Jovian planets and their satellites. Planetary atmospheres, magnetospheres, and the solar wind; planetary interiors. Theoretical and observed properties of exoplanetary systems; astrobology.

**SPAC5111L Space and Planetary Lab (Fa)** Laboratory course in space and planetary sciences consisting of experiments in the five major areas of space and planetary sciences: planetary astronomy, planetary geology, planetary atmospheres, origin and evolution of life and orbital mechanics and astronautics. Intended for students enrolled in the graduate programs in space and planetary sciences.

**SPAC5123 Internship (Sp, Fa)** Internship for graduate students in the space and planetary sciences graduate degree programs and concentrations in the graduate programs in physics, biology, geosciences and mechanical engineering. Students conduct a phase of their research, normally for one month, at a national or industrial laboratory in North America or overseas.

**SPAC5161 Seminar (Sp, Fa)** Seminars organized by the Arkansas-Oklahoma Center for Space and Planetary Sciences covering topics on the cutting edge of research in the field for graduate students conducting research with a faculty member in the space and planetary sciences as part of their graduate degree programs or concentrations in the graduate programs in physics, biology, geology, geography and mechanical engineering.

**SPAC5211 SPAC Proseminar (Sp)** Introductory course consisting of discourses and case studies in ethics, communications and public policy in the administration of space and planetary sciences. Prerequisites: Admission to program or instructor consent.

**SPAC5313 Planetary Atmospheres (Irregular)** Origins of planetary atmospheres, structures of atmospheres, climate evolution, dynamics of atmospheres, levels in the atmosphere, the upper atmosphere, escape of atmospheres, and comparative planetology of atmospheres. (Same as CHEG 5313)

**SPAC5413 Planetary Geology (Even years, Sp)** Exploration of the solar system, geology and stratigraphy, meteorite impacts, planetary surfaces, planetary crusts, basaltic volcanism, planetary interiors, chemical composition of the planets, origin and evolution of the Moon and planets.

**SPAC5513 Biochemical Evolution (Odd years, Sp)** Abiotic synthesis of biomolecules on Earth, the origin of cells; genetic information, origin of life on Earth and elsewhere, evolution and diversity, ecological niches, bacteria, archaea, and eukaryotic, novel metabolic reshaping of the environment, life being reshaped by the environment, molecular data, and evolution. Prerequisite: CHEM 5813.

**SPAC5553 Astrobiology (Even years, Sp)** Discusses the scientific basis for the possible existence of extraterrestrial life. Includes origin and evolution of life on Earth, possibility of life elsewhere in the solar system (including Mars), and the possibility of life on planets around other stars. Prerequisite: Instructor Consent. (Same as BIOL 5553)

**SPAC5613 Astronautics (Irregular)** Study of spacecraft design and operations. Prerequisite: Admission to program or instructor consent.

**SPAC600V Master's Thesis (Sp, Su, Fa) (1-10)**

**SPAC700V Doctoral Dissertation (Sp, Su, Fa) (1-18)**

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### Spanish (SPAN)

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**SPAN1003 Elementary Spanish I (Sp, Fa)**

**SPAN1003 Elementary Spanish I (Sp, Fa)**

**SPAN1013 Elementary Spanish II (Sp, Fa)** Elementary courses stress pronunciation, aural comprehension, and simple speaking ability, and lead to active mastery basic grammar and limited reading ability.

**SPAN1016 Intensive Elementary Spanish (Fa)** Equivalent to 1003 and 1013. Stresses aural comprehension and practical speaking ability. Reading, writing, and grammar in support of communication skills.

**SPAN2003 Intermediate Spanish I (Sp, Fa)** Intermediate courses lead to greater facility in spoken language and to more advanced reading skills.

**SPAN2013 Intermediate Spanish II (Sp, Fa)** Continued development of basic speaking comprehension and writing skills and intensive development of reading skills.

**SPAN2013H Honors Intermediate Spanish II (Sp, Fa)** Continued development of basic speaking comprehension and writing skills and intensive development of reading skills.

**SPAN2016 Intensive Intermediate Spanish (Sp)** Equivalent to 2003 and 2013. Stresses aural comprehension and practical speaking ability. Reading, writing, and grammar in support of communication skills. Prerequisite: SPAN 1013 or equivalent.

**SPAN3003 Advanced Spanish (Sp, Fa)** Further intensive practice to strengthen written and oral expression. Includes a review of the essentials of Spanish grammar. Prerequisite: SPAN 2013 or equivalent.

**SPAN3033 Conversation and Composition (Sp, Su, Fa)** Three hours per week of guided conversation (oral) and composition (written) practice for the post-intermediate student. Prerequisite: SPAN 3003.

**SPAN3063 Intensive Spanish Reading I (Su)** A rapid course in the fundamentals of Spanish for advanced students who do not desire to follow the usual curriculum Spanish in the shortest possible time.

**SPAN3103 Cultural Readings (Sp, Fa)** A course designed to build vocabulary and to strengthen reading skills and oral expression through extensive practice with culturally authentic materials. Prerequisite: SPAN 2013 or equivalent.

**SPAN3113 Introduction to Literature (Sp, Fa)** Further development of reading skills and introduction to literary commentary and analysis. Prerequisite: (SPAN 3003 and SPAN 3103) or equivalent.

**SPAN3123 Spanish for Heritage Speakers (Irregular)** Advanced course for native Spanish speakers. A study of literary and cultural texts related to Hispanics in the U.S. A review of key language structures, and formal Spanish training for academic and professional contexts. Native speakers can take this course in lieu of SPAN 3103 and SPAN 3003.

**SPAN399VH Honors Spanish Course (Sp, Fa) (1-6)** Prerequisite: Junior standing. May be repeated for up to 12 hours of degree credit.

**SPAN4003 Advanced Grammar (Sp)** For majors and advanced students covering the problematic areas of Spanish syntax and usage. Prerequisite: SPAN 3003 and SPAN 3103.

**SPAN4033 Advanced Conversation (Sp)** Three hours per

week of conversation practice for the advanced undergraduates.

Prerequisite: SPAN 3033 and SPAN 4003.

**SPAN4103 Monuments of Spanish Literature I (Fa)** Monuments of the major works of Spanish literature from El Cid through the 17th century. Prerequisite: SPAN 3113.

**SPAN4113 Monuments of Spanish Literature II (Sp)** Monuments of Spanish literature from the 18th century to the present. Prerequisite: SPAN 3113.

**SPAN4133 Survey of Spanish-American Literature I (Even years, Sp)** Survey of Spanish-American literature from the Colonial period to mid-19th Century, including pre Hispanic Indigenous Literatures. Prerequisite: SPAN 3113.

**SPAN4193 Survey of Spanish-American Literature II (Odd years, Sp)** Survey of Spanish-American literature from Modernism to the present, including U.S. Latino literature. Prerequisite: SPAN 3113.

**SPAN4213 Spanish Civilization (Sp)** A wide-ranging exploration of Spanish history and culture from the Middle Ages to the present. Prerequisite: SPAN 3113.

**SPAN4223 Latin American Civilization (Fa)** Prerequisite: SPAN 3113.

**SPAN4243 Literature and Culture in the Hispanic United States (Sp, Su, Fa)** An exploration of the history and culture, art and politics of the major Hispanic groups in the United States. Focus on contemporary attitudes and issues. Prerequisite: SPAN 3113.

**SPAN4253 Latin American Cinema and Society (Irregular)** This course examines key issues in Latin American culture and history through films, documentaries, and literary and cultural texts. Topics included are: Human Rights, Ethnicity, Gender, Revisions of the past. Prerequisite: SPAN 3113.

**SPAN4333 Business Spanish I (Sp)** Enhances ability to relate to Spanish-speaking business environments by providing a solid foundation in vocabulary and discourse related to functional business areas such as organization of a company structure, management, banking and accounting, capital investment, personnel and office systems, production of goods and services, marketing, finance, and import-export. Prerequisite: SPAN 3003.

**SPAN4433 Business Spanish II (Sp)** Reinforces concepts and vocabulary covered in SPAN 4333 and further enhances ability to function in a Spanish-speaking environment by providing instruction in the preparation of written documents such as form letters, communications, letters of credit, contracts, memoranda, letters of recommendation, dossiers, and order forms. Prerequisite: SPAN 4333.

**SPAN4553 Latin America Today (Odd years, Fa)** An exploration of recent and contemporary issues in Latin American culture and society, including social classes, ethnicity, urbanization, family, education, and religion, as well as popular culture and artistic movements. Prerequisite: SPAN 3113.

**SPAN470V Special Topics (Irregular) (1-3)** May be offered in a topic not specifically covered by courses otherwise listed. May be repeated for up to 6 hours of degree credit.

**SPAN475V Special Investigations (Sp, Fa) (1-6)**  
**SPAN4883 Indigenous Literatures of Mesoamerica, the Andes and the Amazon (Irregular)** A study of native oral narratives, literary texts and other writing forms in the Americas, from ancient times to the present, including the Andean Khipus, Mesoamerican Codices, and Amazonian mythic narratives. Prerequisite: SPAN 3113. (Same as SPAN 5883)

**SPAN5203 Medieval Spanish Literature (Irregular)** From the 'Jarchas' to the Celestina.

**SPAN5233 Golden Age Novel (Irregular)** Major works of Spanish prose fiction from the 16th and 17th centuries, with close reading of major works.

**SPAN5243 Golden Age Poetry and Drama (Irregular)** History and development of those genres in the 16th and 17th centuries, with close reading of major works.

**SPAN5253 Colonial Literature and Culture (Sp, Su, Fa)** An introductory course to the history, culture and literature of colonial Spanish America from 1492 until 1810. The course will cover representative colonial and indigenous texts and their contexts including Renaissance, Baroque, and travel literature of the Eighteenth Century. The course will be taught in Spanish.

**SPAN5273 Nineteenth Century Survey (Irregular)** From Neoclassicism through Naturalism.

**SPAN5283 Nineteenth Century Drama and Poetry (Irregular)** From Romanticism to the Generation of 1898.

**SPAN5343 Advanced Survey of Spanish Literature Since 1898 (Irregular)** Intensive survey of the literature of Spain from the Generation of 1898 to the present. Prerequisite: graduate standing.

**SPAN5393 19th Century Spanish American Literature (Sp, Su, Fa)** Study of representative literary works from Independence (1810) to 1900's. The course covers Neoclassicism, Romanticism, Realism/Naturalism, and Modernism and the role of literature in the nation-building process. The course will be taught in Spanish.

**SPAN5403 Spanish American Theatre (Sp, Su, Fa)** Historical examination of the theatre in Spanish America, with close analysis

particularly of representative works and movements in the 20th century.

**SPAN5433 Cervantes: Don Quijote (Irregular)** A close reading of Spain's greatest literary masterpiece.

**SPAN5453 Cinema and Literature (Irregular)** This course examines several Latin American and Spanish texts and their film adaptations as well as the main film making trends in the Hispanic world.

**SPAN5463 20th Century Spanish American Literature (Sp, Su, Fa)** Critical survey of major movements and outstanding and representative works in 20th century prose and poetry, from the Mexican Revolution and the avant-garde to the contemporary boom and post-boom.

**SPAN5703 Special Topics (Irregular)** May be offered in a subject not specifically covered by the courses otherwise listed. May be repeated for up to 6 hours of degree credit.

**SPAN575V Special Investigations (Irregular) (1-6)**

**SPAN5773 Indigenismo Literature (Irregular)** A study of 'indigenismo', an intellectual and literary tradition in Latin America examining the history of exploitation and marginalization of indigenous peoples. Readings include texts by Mariategui, Icaza, Andrade, Asturias, Arguedas, Castellanos, and also 'indigenista' works in music and the plastic arts.

**SPAN5883 Indigenous Literatures (Irregular)** A study of native oral narratives, literary texts and other writing forms in the Americas, from ancient times to the present, including the Andean Khipus, Mesoamerican Codices, and Amazonian mythic narratives. (Same as SPAN 4883)

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### Statistics (STAT)

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**STAT2023 Biostatistics (Sp)** An introductory course in biostatistics emphasizing methods for collecting, graphing, and understanding data. Special emphasis is placed upon available methods for both exploratory and confirmatory data analysis. Particular attention is given to statistical methods for data sets with discrete variables. Pre- or Corequisite: MATH 2554. Corequisite: Lab component.

**STAT2303 Principles of Statistics (Sp)** A problem-oriented course with applications from many fields. Emphasis on understanding the nature of statistical orderliness implied by probability laws. Statistical analysis is treated as a means of decision making in the face of uncertainty.

**STAT3013 Introduction to Probability and Statistics (Sp, Su, Fa)** A calculus-based introduction to the foundations of probability and statistics. Emphasis is placed upon understanding elementary properties of probabilities, events, statistical densities and distributions, properties of random variables, law of large numbers, and their relationship to sampling and statistical inference. Prerequisite: MATH 2564.

**STAT4001L Statistics Methods Laboratory (Sp, Fa)** Emphasis on use of integrated statistical packages to complement statistical methodology being covered concurrently in STAT 4003. Corequisite: STAT 4003.

**STAT4003 Statistical Methods (Sp, Fa)** Concepts of probability, sampling, regression, and experimental design. Corequisite: STAT 4001L. Prerequisite: MATH 2554.

**STAT4033 Nonparametric Statistical Methods (Sp, Su, Fa)** Chi square tests, Kolmogorov-Smirnov goodness-of-fit tests, the Mann-Whitney and Wilcoxon 2-sampling tests, and various nonparametric measures of association. Prerequisite: MATH 1203 and junior standing.

**STAT4043 Sampling Techniques (Sp, Su, Fa)** Considers optimum techniques of simple random, stratified random, cluster, systematic and multistage sampling from finite populations subject to cost precision constraints. Wide range of application. Prerequisite: STAT 4003.

**STAT4373 Experimental Design (Sp)** Topics in the design and analysis of planned experiments, including randomized block, Latin square, split plot, and BIB designs, use of fractional factorial replication, and repeated measures. Prerequisite: STAT 4003.

**STAT5103 Theory of Statistics (Fa)** Fundamentals of probability, distribution theory, and random variables; expected value, moments, and generating functions; classic parametric families of distributions; central limit theorems, inequalities, and laws of large numbers. Prerequisite: MATH 2574.

**STAT5113 Statistical Inference (Sp)** Statistical theory of estimation and testing hypothesis. Prerequisite: STAT 5103.

**STAT5313 Regression Analysis I (Sp)** Matrix formulation of least squares and multiple regression models. Estimability and use of the generalized inverse in analysis of variance and covariance models of less than full rank. Computational aspects are emphasized.

**STAT5333 Analysis of Categorical Responses (Sp)** A modern treatment, including extensions of classical probit analysis, multivariate logistic models, GSK model, loglinear models in analysis of multiway contingency tables, and nonmetric multidimensional scaling. Prerequisite: STAT 5313.

**STAT5343 Stochastic Processes (Sp, Su, Fa)** Markov chains, branching processes, birth-death processes, queuing theory with application. Prerequisite: STAT 5103.

**STAT5353 Methods of Multivariate Analysis II (Sp)** Hotelling's T2 procedures, multivariate analysis of variance, discriminant function analysis and problems of classification, multidimensional scaling, and cluster analysis. Prerequisite: STAT 5313.

**STAT5383 Time Series Analysis (Sp, Su, Fa)** Identification, estimation and forecasting of time series. Spectral analysis including the fast Fourier transform computational aspects are emphasized. Prerequisite: STAT 5103.

**STAT5413 Spatial Statistics (Fa)** Applied spatial statistics, covering univariate spatial modeling (kriging), multivariate spatial modeling (cokriging), methods of estimation and inference, and spatial sampling designs. Special relevance to remote sensing. Prerequisite: STAT 5313.

**STAT610V Research in Statistics (Irregular) (1-4)** Prerequisite: Graduate standing.

**STAT639V Topics in Statistics (Irregular) (1-3)** Current state of the art on methodology in one of the topics: multivariate analysis, time series analysis, sequential analysis, factor analysis, or biostatistics.

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### Swahili (SWAH)

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**SWAH1003 Elementary Swahili I (Fa)** Stresses correct pronunciation, aural comprehension, simple speaking ability, and leads to mastery of basic grammar and limited reading ability.

**SWAH1013 Elementary Swahili II (Sp)** Continues to stress correct pronunciation, aural comprehension, and speaking ability and continues to build mastery of basic grammar and limited reading ability. Prerequisite: SWAH 1003

**SWAH1116 Intensive Swahili I (Irregular)** Equivalent to 1003 and 1013. Stresses correct pronunciation, aural comprehension, and simple speaking ability, and leads to mastery of basic grammar and limited reading ability.

**SWAH2003 Intermediate Swahili I (Fa)** Leads to greater facility in spoken language and develops more advanced reading and writing skills. Prerequisite: SWAH 1003 and SWAH 1013.

**SWAH2013 Intermediate Swahili II (Sp)** Leads to greater facility in spoken language and develops more advanced reading and writing skills. Prerequisite: SWAH 1003, SWAH 1013 and SWAH 2003.

**SWAH2116 Intensive Swahili II (Irregular)** Equivalent to 2003 and 2013. Leads to greater facility in speaking, comprehension, and writing skills and intensive development of reading skills. Prerequisite: SWAH 1116 or SWAH 1003 and SWAH 1013.

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### Technology Education (TEED)

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**TEED1103 The Nature of Technology (Sp)** Foundational study of the close relationship between nature, emerging technologies, and technological literacy throughout history.

**TEED1201L Drafting Technology I Laboratory (Sp, Su, Fa)** Laboratory exercises in principles and practices of drafting technology I. Corequisite: TEED 1203.

**TEED1203 Drafting Technology I (Fa)** Use and care of instruments; lettering, sketching, applied geometry, pictorial drawing, and orthographic projection. Introduction to computer-aided drafting. Corequisite: TEED 1201L.

**TEED1503 Introduction to Technology Education (Sp, Su, Fa)** Surveying and interpreting the origin, principles, and objectives of technology education and its relationship to other educational programs.

**TEED1603 Industrial Safety (Irregular)** Study of accidents, causes, the cost of accidents, appraising safety performance, safety inspection, planning and maintaining a safe environment, and organization and operation of school laboratories and industrial accident prevention programs.

**TEED2103 Technology and Society (Fa)** An examination of the complex relationships between society, values, and technological development in developed and under-developed nations.

**TEED2313 Fundamentals of Production (Irregular)** Instruction and practice in the development, teaching, and assessment of curriculum related to the technological fields of construction and manufacturing.

**TEED2423 Industrial & Technological Maintenance (Irregular)** The principles and practices used in installing, maintaining, troubleshooting, diagnosing, and repairing technological equipment and materials found in a modern technology education laboratory.

**TEED3103 Technology Research, Experimentation, and Trouble-shooting (Even years, Sp)** Foundational concepts of engineering and design, including analysis and use of technology problem solving tools of research, experimentation and trouble-shooting.

**TEED3203 Information and Communication Systems (Irregular)** Conceptual foundations and methodologies for teaching

information and communications technology at the secondary level. Prerequisites: TEED 1103 and TEED 2103.

**TEED3303 Energy, Power and Transportation (Irregular)** Conceptual foundations and methodologies for teaching energy, power, and transportation technologies at the secondary level. Prerequisites: TEED 1103 and TEED 2103.

**TEED3323 Construction Technologies (Irregular)** Fundamentals of construction technology with an emphasis on the tools, techniques and practices used in the technical area. Additional concentration on appropriate techniques for teaching construction technology.

**TEED3433 Electricity & Electronics Technology (Irregular)** Fundamentals of the electricity and electronics technical areas. Particular emphasis placed on using technologies from the industry (PLC's, relays, control systems, switching devices, etc.) to teach technology education.

**TEED3513 Elementary Technology Education (Irregular)** An introductory course in technology education focusing on the development and introduction of technology and engineering-based activity in the elementary and middle-levels.

**TEED3633 Plastics Technology (Irregular)** Tools, materials, and processes involved in the use and fabrication of plastics relating to modern plastic industries.

**TEED4103 Engineering Design for Technology Education Capstone (Irregular)** Analysis of engineering design, focus on design processes, physical and computer modeling, and materials processing. Prerequisites: TEED 1103 and TEED 3103.

**TEED4523 Advanced Technology Education (Irregular)** Provides the student with the expertise to develop and update a typical technology education program in order to keep the program current with changes in state and national trends in the discipline.

**TEED459V Industrial Internship (Sp, Su, Fa) (1-12)** In an actual industrial setting, the student will study managerial functions, organizational practices, product design, production fabrication, routing, quality control, work schedules, industrial relations, and related activities of American industrial society. May be repeated for up to 15 hours of degree credit.

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### Transportation & Logistics (TLOG)

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**TLOG3443 Principles of Transportation (Fa)** Examines forms of transportation and institutional factors that influence transportation decisions; regulation, public policy, other governmental variables reviewed in detail. An introduction to physical distribution's interaction with transportation explored. Prerequisite: ECON 2013 and ECON 2023 or ECON 2143.

**TLOG3613 Business Logistics (Fa)** Management of logistics functions in the firm including physical supply and distribution activities such as transportation, storage facility location, inventory control, materials handling, warehousing, and organization. Prerequisite: (ECON 2013 and ECON 2023) or ECON 2143.

**TLOG3623 Purchasing and Inventory Systems (Fa)** Management of the purchasing function, including organization, procedures, supplier selection and development, quality control, price determination, global sourcing, and methods of inventory control. Prerequisite: TLOG 3613.

**TLOG4633 Transportation Carrier Management (Fa)** Reviews special management techniques and analytical framework available for solving problems associated with transportation companies. Prerequisite: TLOG 3443.

**TLOG4643 International Transportation and Logistics (Sp)** Logistics activities in international business with special emphasis on transportation, global sourcing, customs issues, governmental influence, facility location in global environment, and import-export opportunities. Special emphasis is placed on current events and their effect on the marketing and logistics activities of U.S.-based organizations. Pre- or Corequisite: TLOG 3443. Prerequisite: TLOG 3613.

**TLOG4653 Transportation and Logistics Strategy (Sp)** Design and management of transportation and logistics systems for firms of varying size and different supply and market conditions. This capstone course relies heavily on computer assisted cases and lectures from visiting transportation and logistics executives. Prerequisite: TLOG 3443 and TLOG 3613.

**TLOG466V Independent Study in Transportation and Logistics (Sp, Su, Fa) (1-3)** Permits students to explore selected topics in transportation/logistics.

**TLOG560V Special Topics in Logistics (Irregular) (1-3)** Explores current events, concepts, and new developments in the field of logistics and transportation. Topics are selected by the Marketing and Transportation faculty for each semester the course is offered. May be repeated for up to 3 hours of degree credit.

**TLOG5633 Retail and Consumer Products Supply Chain Management (Sp)** Supply chain management is the integration of key business processes from end user through suppliers. The focus of this course is on the core processes that must be linked throughout the supply chain with an emphasis on logistics processes.

Foundational topics in logistics and supply chain management will be covered.

**TLOG5643 Transportation Strategies in the Supply Chain (Fa)** This course focuses on the setting of objectives and the design of optimal transportation strategy and alternative means of implementing transportation strategies within different types of organizations.

**TLOG5653 Global Logistics and Supply Management (Irregular)** This course examines the planning and management of logistics, but emphasizes supplier selection and development, logistics options, strategic alliances, and performance measurement. Emphasis is placed on the integration of purchasing, materials management, and multi-firm logistics planning. International logistics is also addressed within each of these topics. Prerequisite: TLOG 5633.

**TLOG5663 Supply Chain Management (Fa)** This course examines the planning and management of supply chain activities including supplier selection and development, demand management, quick response, vendor managed inventory, logistics options, strategic alliances, and performance measurement. Emphasis is placed on the integration of purchasing, materials management, and multi-firm logistics planning.

**TLOG5673 Modeling Retail & Consumer Products Logistics (Irregular)** This is a more quantitative approach to measuring logistics performance, modeling tradeoffs and making decisions. Topics include forecasting, inventory management, network optimization, and transportation routing. Prerequisite: TLOG 5633.

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### U A Clinton School (UACS)

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**UACS501V Special Topics in Public Service (Irregular) (1-3)** Designed to cover specialized topics not usually presented in depth in regular courses. May be repeated for up to 6 hours of degree credit.

**UACS502V Advanced Problems in Public Service (Irregular) (1-3)** Provides an opportunity for individual study.

**UACS5101 Ethical and Legal Dimensions of Public Service (Irregular)** This course will provide an overview of the primary ethical principles and legal concepts that guide difficult decisions in the public realm. Traditional academic study of ethical and legal theory will be combined with practical approaches to problem solving. Students will explore issues of economic, political, and social justice through case studies of current issues. Students will construct cases that are relevant to their own fields and present them to the class, identifying ethical and legal constraints on decision-making and implementation.

**UACS5303 Communication Processes and Conflict Transformation (Irregular)** The course is designed to increase the student's personal communication effectiveness as a leader and public servant, and to enable students to understand the application of communication processes in the public arena.

**UACS5313 Dynamics of Social Change (Irregular)** The course deals with the elements of social change in a democratic society, and how these intersect with and are affected by economic and political forces. A critical examination of the various justifications for promoting or discouraging social change will be undertaken, and the inherent strengths and weaknesses of these various approaches will be analyzed. Real-world cases will be used, and a culminating exercise will be a strategic assessment of the Lower Mississippi Delta.

**UACS5323 Leadership in Public Service (Irregular)** This course is designed to increase students' knowledge of leadership concepts and best practices, provide opportunities and experiences that improve leadership skills and techniques, and enhance capabilities in organizational management. Students will assess their leadership strengths and weaknesses, as well as develop an action plan to match their career goals. They will improve knowledge and skills in building diverse teams, in initiating/managing change, in addressing uncertainty, and in leading non-governmental organizations. At the end of the course, students should be able to design leadership strategies to successfully address a spectrum of issues in public service and in promoting the community good.

**UACS5333 Analysis for Decision Making In Public Service (Irregular)** This course is intended to provide students with analytical tools that enhance their skills in diagnosing problems and formulating solutions within organizations and communities. Instruction will focus on evaluating community assets as a balance to assessing community need. Underlying values of social justice and collaborative problem-solving provide a benchmark for these activities. Students, working in teams, will be challenged to apply their skills to cases related to affordable housing and homelessness.

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### Vocational and Adult Education (VAED)

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**VAED1011 Career Exploration (Sp)** This course examines career exploration strategies using commonly accepted theory in career development. The focus is on decision-making principles, understanding personal characteristics, exploring academic majors, researching occupations and creating a career plan.



**VAED3401 Career Planning and Professional Development for Juniors and Seniors (Sp, Fa)** This course examines the career planning process of self-assessment, exploring career opportunities in the world of work and learning assertive job search strategies that result in the development of a "Life after College" career plan.

**VAED692V Directed Field Experience (Irregular) (1-18)** Teaching and supervision in secondary or post-secondary schools or work in business or industry under guidance. For students who desire or need directed experience.

**VAED699V Seminar (Irregular) (1-18)** May be repeated for up to 18 hours of degree credit.

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### Walton College of Business (WCOB)

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**WCOB1012 Legal Environment of Business (Sp, Su, Fa)** Introduction to the legal and ethical environment in which businesses operate. Topics covered in this survey course include: foundations of the American legal system, regulatory environment, torts, criminal law, laws affecting contracts and property, employment law, and forms of doing business.

**WCOB1012 Legal Environment of Business (Sp, Su, Fa)** Introduction to the legal and ethical environment in which businesses operate. Topics covered in this survey course include: foundations of the American legal system, regulatory environment, torts, criminal law, laws affecting contracts and property, employment law, and forms of doing business.

**WCOB1012H Honors Legal Environment of Business (Irregular)** Introduction to the legal and ethical environment in which businesses operate. Topics covered in this survey course include: foundations of the American legal system, regulatory environment, torts, criminal law, laws affecting contracts and property, employment law, and forms of doing business.

**WCOB1023 Business Foundations (Sp, Su, Fa)** Surveys the areas of business and presents business processes that are common to most enterprises through a hands-on, interactive business experience. Also develops the double-entry accounting framework that captures and reports information about business process performance. Topics include: analysis and recording of transactions, accounting cycle, and preparation of financial statements. Prerequisite: COMM 1313 with grade of C or better and WCOB 1120.

**WCOB1023H Honors Business Foundations (Sp)** Surveys the areas of business and presents business processes that are common to most enterprises through a hands-on, interactive business experience. Also develops the double-entry accounting framework that captures and reports information about business process performance. Topics include: analysis and recording of transactions, accounting cycle, and preparation of financial statements. Prerequisite: COMM 1313 with grade of C or better and WCOB 1120.

**WCOB1033 Data Analysis and Interpretation (Sp, Su, Fa)** This is an introductory level course covering topics involving estimation of population characteristics, research design and hypothesis testing, as well as measuring and predicting relationships. The course should enable the students to develop an understanding regarding the application and interpretation of basic data analysis techniques with an emphasis on statistical applications. Prerequisite: WCOB 1120 and MATH 2053 with grade of "C" or better or MATH 2554 with a grade of "C" or better.

**WCOB1033H Honors Data Analysis and Interpretation (Irregular)** This is an introductory level course covering topics involving estimation of population characteristics, research design and hypothesis testing, as well as measuring and predicting relationships. The course should enable the students to develop an understanding regarding the application and interpretation of basic data analysis techniques with an emphasis on statistical applications. Prerequisite: WCOB 1120 and (MATH 2053 with grade of "C" or better or MATH 2554 with a grade of "C" or better).

**WCOB1111 Freshman Business Connection (Fa)** Development of personal development skills, including time management; stress management and academic planning, necessary for success; introduction to business career options and opportunities.

**WCOB1111H Honors Freshman Business Connection (Irregular)** Development of personal development skills, including time management; stress management and academic planning, necessary for success; introduction to business career options and opportunities.

**WCOB1120 Computer Competency Requirement (Sp, Su, Fa)** Students entering the Walton College are expected to possess basic competencies in MS Windows, Word, Excel, PowerPoint, and Blackboard, and be familiar with e-mail and the Internet. Students need to pass a competency test. Deficiencies may be remedied through appropriate self-paced, computer-based instruction.

**WCOB200V Study Abroad (Su) (1-15)** Open to freshmen and sophomore undergraduate students studying abroad in officially sanctioned programs. May be repeated for up to 24 hours of degree credit.

**WCOB2013 Markets and Consumers (Sp, Su, Fa)** Key decisions required to understand the existence of markets and how buyers within those markets may be accessed profitably. Key concepts include an overview of competitive markets, buyer behavior, developing new markets and products, promotion and distribution channels, pricing and profitability concepts, the sales and collections process, and strategic planning. Prerequisite: WCOB 1023, WCOB 1033, ECON 2023, and WCOB 1012--each with a grade of "C" or better.

**WCOB2013H Honors Markets and Consumers (Irregular)** Key decisions required to understand the existence of markets and how buyers within those markets may be accessed profitably. Key concepts include an overview of competitive markets, buyer behavior, developing new markets and products, promotion and distribution channels, pricing and profitability concepts, the sales and collections process, and strategic planning. Prerequisite: WCOB 1023, WCOB 1033, ECON 2023, and WCOB 1012--each with a grade of "C" or better.

**WCOB2023 Production and Delivery of Goods and Services (Sp, Su, Fa)** This course is designed to provide students with a broad understanding of the production and delivery of goods/services. The course focuses on concepts and methodologies for managing the flow of material and information throughout the production and delivery of goods/services. Prerequisite: WCOB 1023, WCOB 1033, ECON 2023, and WCOB 1012--each with a grade of "C" or better.

**WCOB2023H Honors Production and Delivery of Goods and Services (Irregular)** This course is designed to provide students with a broad understanding of the production and delivery of goods/services. The course focuses on concepts and methodologies for managing the flow of material and information throughout the production and delivery of goods/services. Prerequisite: WCOB 1023, WCOB 1033, ECON 2023, and WCOB 1012--each with a grade of "C" or better.

**WCOB2033 Acquiring and Managing Human Capital (Sp, Su, Fa)** Study of the process of acquiring and managing human resources, focusing on the organizational behavior, legal, economic, and technical issues concerned with business decisions about acquiring, motivating, and retaining employees; emphasis given to the development, implementation, and assessment of policies and practices consistent with legal, social, human, and environmental dynamics. Prerequisite: WCOB 1023, WCOB 1033, ECON 2023, and WCOB 1012--each with a grade of "C" or better.

**WCOB2033H Honors Acquiring and Managing Human Capital (Irregular)** Study of the process of acquiring and managing human resources, focusing on the organizational behavior, legal, economic, and technical issues concerned with business decisions about acquiring, motivating, and retaining employees; emphasis given to the development, implementation, and assessment of policies and practices consistent with legal, social, human, and environmental dynamics. Prerequisite: WCOB 1023, WCOB 1033, ECON 2023, and WCOB 1012--each with a grade of "C" or better.

**WCOB2043 Acquiring and Managing Financial Resources (Sp, Su, Fa)** Key decisions within business processes related to the acquisition and management of capital resources, including decisions regarding what to acquire, how to finance the acquisition, and issues related to the accounting for those capital resources. The identification of key decisions leads to decision models and the identification of information needs. Prerequisite: WCOB 1023, WCOB 1033, ECON 2023, and WCOB 1012--each with a grade of "C" or better.

**WCOB2043H Honors Acquiring and Managing Financial Resources (Irregular)** Key decisions within business processes related to the acquisition and management of capital resources, including decisions regarding what to acquire, how to finance the acquisition, and issues related to the accounting for those capital resources. The identification of key decisions leads to decision models and the identification of information needs. Prerequisite: WCOB 1023, WCOB 1033, ECON 2023, and WCOB 1012--each with a grade of "C" or better.

**WCOB210V Special Topics in Business (Sp) (3-6)** Special topics of an interdisciplinary nature. May be repeated for up to 6 hours of degree credit.

**WCOB3003H Honors College Colloquium (Sp, Fa)** An interdisciplinary course exploring events, concepts, and/or new developments in the field of business administration. Prerequisite: Junior or senior standing. May be repeated for up to 6 hours of degree credit.

**WCOB300V Study Abroad (Sp, Su, Fa) (1-15)** Open to undergraduate students studying abroad in officially sanctioned programs. May be repeated for up to 24 hours of degree credit.

**WCOB3016 Business Strategy and Planning (Sp, Fa)** Integrative study of the managerial decisions; introduces students to an understanding of strategic competitiveness and the way in which business strategy is formulated and implemented; uses a combination of theoretical and experiential approaches to designing business plans for key decisions, implementing these decisions, and monitoring their effects. Prerequisite: A business student must complete the pre-business requirements before enrolling for this course. WCOB 2013, WCOB 2023, WCOB 2033, and WCOB 2043 must each be completed with a grade of "C" or better. This course is restricted to Walton College students.

**WCOB3016H Honors Business Strategy and Planning (Fa)** Integrative study of the managerial decisions; introduces students to an understanding of strategic competitiveness and the way in which business strategy is formulated and implemented; uses

a combination of theoretical and experiential approaches to designing business plans for key decisions, implementing these decisions, and monitoring their effects. Prerequisite: a business student must complete the pre-business requirements before enrolling for this course. WCOB 2013, WCOB 2023, WCOB 2033, and WCOB 2043 must each be completed with a grade of "C" or better. This course is restricted to Walton College students.

**WCOB3033 The African American Experience in Business (Irregular)** This course is designed to provide the student with a comprehensive and critical analysis of the history of the African American experience as a member of the business sector of the United States economics. The course will review information that includes and demonstrates activities prior to slavery, during, and after slavery.

**WCOB310V Cooperative Education (Sp, Su, Fa) (1-3)** Co-op allows students to earn one or two hours of credit per semester for work related to their major. Accumulated credit may not exceed six hours. Eligibility requires: 1) junior standing in the college, 2) completion of the pre-business core and 3) the prescribed GPA. See catalog for details. Prerequisite: Junior standing and completion of pre-business core. May be repeated for up to 6 hours of degree credit.

**WCOB410V Special Topics in Business (Irregular) (1-6)** Special business topics of an interdisciplinary nature. May be repeated for up to 6 hours of degree credit.

**WCOB410VH Honors special Topics in Business (Irregular) (1-6)** Special business topics of an interdisciplinary nature. May be repeated for up to 6 hours of degree credit.

**WCOB4213 ERP Fundamentals (Sp, Fa)** An introduction to enterprise resource planning systems. Students should gain an understanding of the scope of these integrated systems that reach across organizational boundaries and can change how a company does business. Implementation issues are covered, including the importance of change management. Prerequisite: WCOB 2023 and WCOB 2043 or CSCE 2014 each with a grade of "C" or better.

**WCOB4223 ERP Configuration and Implementation (Fa)** The process of configuring and implementing an enterprise resource planning system. Business process analysis and integration. Students will develop a company and set up several modules in SAP R/3 for use. Develop understanding of how the business processes work and integrate. Prerequisite: WCOB 2023 and WCOB 2043 or equivalent with ISYS department consent for non-business majors.

**WCOB455V Service Learning Practicum (Sp, Su, Fa) (1-3)** Through participation in this practicum, students learn while providing services that benefit the community. The goal is for students to learn, practice, and teach the principles of free enterprise. The students assess community needs and design service projects that enable them to apply course content knowledge while developing organizational, communication, time-management, and leadership skills. May be repeated for up to 6 hours of degree credit.

**WCOB4993H Honors Thesis (Sp, Fa)** Provides Honors Students with an opportunity to explore a business topic in depth through an independent research project. Prerequisite: Good standing in the Walton College Honors Program.

**WCOB500V Study Abroad (Sp, Su, Fa) (1-6)** Open to graduate students studying abroad in officially sanctioned programs. May be repeated for up to 12 hours of degree credit.

**WCOB510V Special Topics in Business (Irregular) (1-3)** Special business topics of an interdisciplinary nature. May be repeated for up to 6 hours of degree credit.

**WCOB5213 ERP Fundamentals (Su, Fa)** An introduction to enterprise resource planning systems. Students should gain an understanding of the scope of these integrated systems that reach across organizational boundaries and can change how a company does business. Implementation issues are covered, including the importance of change management. Prerequisite: Graduate standing.

**WCOB5223 ERP Configuration and Implementation (Fa)** The process of configuring and implementing an enterprise resource planning system. Business process analysis and integration. Students will develop a company and set up several modules in SAP R/3 for use. Develop understanding of how the business processes work and integrate. Prerequisite: WCOB 5213 or equivalent.

**WCOB6111 Seminar in Business Administration Teaching I (Fa)** This course in college level teaching is designed for graduate students and new college teachers with specific emphasis on the Business Administration learning and classroom management. The purpose of this course is to introduce graduate students to principles of teaching and learning and to prepare these future teachers to lifelong learners in the classroom as teachers. Prerequisite: Graduate standing.

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### Workforce Development (WDED)

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**WDED5213 Foundations of Adult Education (Sp)** History of the adult education movement in America, characteristics, interests, abilities, and educational needs of adults; the role of the public

school in adult education; methods and techniques of conducting adult classes.

**WDED5223 Principles of ABE/GED/ESL (Su)** An introductory course to teaching adults at the Adult Basic Education (ABE), General Education Development (GED-High School Equivalency), and English as a Second Language (ESL) levels. Will address instructional needs assessment, curriculum development and evaluation, and techniques of teaching basic skills in various settings including public schools, vocational-technical schools, technical institutes, technical colleges, community organizations, and the workplace.

**WDED5233 Teaching Disadvantaged Adults (Su)** A survey of the diversity of adult learners comprising that population described as educationally disadvantaged. Consideration given to the various physical, mental, social, and economic factors which contribute to the uniqueness of this body of individual differing abilities.

**WDED5313 Foundations of Human Resource Development (Fa)** An overview of human resource development (HRD) in organizations. Focus on the integration of individual development (training), career development, and organizational development.

Topics include strategic planning for human resource development, needs assessment, program development, application of workplace learning theories, career development theories and methods, and application of organizational learning theories.

**WDED5323 Organizational Analysis (Su)** This course introduces the analysis process in organizations. The instruction and activities will enable students to develop skills in conducting organizational needs analysis (OA) as a basis for performance improvement in the workplace.

**WDED5333 Developing Human Resources (Fa)** Practical and innovative strategies for making the optimum use of all employees in both private and public organizations.

**WDED5343 Facilitating Learning in the Workplace (Sp)** Facilitation of learning and performance improvement in the workplace. Application of instructional methods, informal and incidental learning strategies, coaching team building, and formal and informal on-the-job learning tactics. Focus on facilitating individual and group learning to affect organizational change.

**WDED5413 Foundations of Vocational Education (Fa)** Surveying and interpreting the origin, principles, and objectives of vocational education and its relationship to other educational programs. Required for all graduate degree candidates in vocational education.

**WDED5433 School-To-Workforce (Su)** This course is designed to provide information on the role of the school in workforce development and to introduce a teacher to the skills desired in a seamless educational curriculum model.

**WDED5513 Principles of Adult Learning (Fa)** The learner in adult education programs is examined from young adulthood to death. Emphasis is given to understanding the effect this knowledge has on the teaching-learning process in adult education and to how adult education programs are designed to serve the uniqueness demanded by adult learning situations.

**WDED5523 Diversity Issues and Globalization (Sp, Fa)** This course emphasis is on diversity in the workplace. Current issues on globalization and diversity are explored. Policy issues pertaining to diversity and globalization are examined. Prerequisite: Graduate standing.

**WDED5533 Change Process (Sp)** Processes available for changing adult behavior in both formal and informal situations. Emphasis on adult educator's role as a change agent.

**WDED5553 Career Development in the Workplace (Su)** This advanced level course is intended for career development professionals and/or subject-matter experts interested in improving their career development skills within a structured or unstructured learning environment. The emphasis in this course is on gaining career development techniques and planning formal and informal career development strategies for the individual or the organization.

**WDED5563 Introduction to Distance Learning (Sp)** This course is designed to build a knowledge base about distance learning environments, especially online learning. This course emphasizes interaction among pedagogical models, instructional models, and learning technologies. The content is contextualized within higher learning, k-12 school, and corporate training.

**WDED5583 Internship (Sp, Su, Fa)** Sitebased activity designed for those seeking Adult Education Licensure. Pre- or Corequisite: WDED 5513. Prerequisite: WDED 5223.

**WDED571V Independent Study (Sp, Su, Fa) (1-3)** May be repeated for up to 3 hours of degree credit.

**WDED572V Workshop (Sp, Su, Fa) (1-3)** Prerequisite: Advanced graduate standing. May be repeated for up to 3 hours of degree credit.

**WDED6113 Nontraditional Student (Sp, Su, Fa)** An overview of activities that could ultimately promote greater access and success for adult learners with higher education and/or advanced training.

**WDED6123 Adult Learner: The Later Years (Sp, Su, Fa)** Directed toward people who are most likely to interact with older adults

in a learner setting. Emphasis is on understanding the educational needs, wants, and characteristics of older learners so that appealing, valuable, and efficient instruction can be developed.

**WDED6133 Learning and Teaching Theories (Sp)** Models and philosophies of important theorists in the field of teaching and learning.

**WDED6213 Training in the Workplace (Su)** An introduction to and survey of current theories and practices in training in the workplace. Students are expected to explore selected interdisciplinary topics in areas such as adult education, vocational education, human resource development, organizational behavior, instructional technology, and economics as they relate to training in the workplace.

**WDED6223 Organization Development (Sp)** This course teaches development of organization activities that intervene in the interaction of people systems to increase the effectiveness of using a variety of applied behavioral sciences. It includes the dynamics of organizations, the genesis of organizational theory and evolution of organizational dynamics, including examination of system structure, chaos theory, group dynamics and interaction, leadership theories, diversity issues impacting organizations, and techniques of change agent intervention.

**WDED6233 Learning Organization (Fa)** This course emphasizes the theory and practice of learning organizations, especially the processes that facilitate individual and group learning.

**WDED6313 Fundamentals of Research in WDED (Fa)** This course addresses the principles and techniques underlying organizational research, both experimental and non-experimental. It covers the basic philosophy of science and research methods and gives attention to the practical problems of design, data collection sampling, and data analysis. Prerequisite: ESRM 5013.

**WDED6323 WDED Qualitative Research Design (Sp)** This course is designed to introduce WDED students to qualitative research design, data collection and data analysis. Course content includes data collection through interviews, field observation, records research, ethical issues associated with conducting research in organizational settings, and internal and external validity problems. Pre- or Corequisite: Three hours of statistics and computer literacy. Prerequisite: WDED 6313 and ESRM 6403.

**WDED6333 WDED Quantitative Research Design (Su, Fa)** This course provides students with the tools and abilities to design and implement an original research project using quantitative measures. Primary course elements are research design application, theoretical settings of research, and nesting research within an appropriate literature base. The course uses online technologies and on-campus learning experiences. Prerequisite: WDED 6313 and ESRM 6403.

**WDED6513 Leadership Models and Concepts (Sp, Su)** This doctoral course concentrates on using commonly accepted principles of leadership to develop skills needed in workforce development education settings.

**WDED6523 Curriculum Development in Vocational and Adult Education (Sp, Su, Fa)** Determining principles of curriculum development, organizing curricula, and evaluating curriculum materials with special reference to vocational and adult education.

**WDED6533 Adult Literacy (Su)** This course is based upon theoretical models of adult learning and teaching methods. The course addresses the historical background of literacy programs, evolution of teaching techniques, social economic and community, needs, curriculum development and evaluation, and techniques of teaching adult literacy in various settings, including public schools, vocational and technical schools, technical institutes, technical colleges, community organizations, and the workplace.

**WDED6543 Program Planning (Sp)** Emphasis is given to understanding the theoretical foundation upon which the programming process is predicated, developing a theoretical mode, and acquiring the conceptual tools necessary for analyzing the programming process in any workforce development education organization.

**WDED6553 Program Evaluation (Su)** This course is a doctoral level course designed as an introduction to program evaluation in workforce leadership and human resource development. Emphasis is on (a) systems thinking applied to evaluation, (b) organizational development and program improvement, and (c) the integration of evaluation with strategic planning and performance improvement.

**WDED6563 Ethical and Legal Issues (Fa)** Focuses on ethical and legal issues within the workplace and behavioral science research. Students gain knowledge that should enable them to be effective in understanding ethical and legal issues within their workplace and how they can impact society.

**WDED698V Practicum (Sp, Su, Fa) (1-6)** Practicum is designed to allow doctoral students in workforce development education an opportunity to apply the theoretical knowledge, skills and abilities within the workplace. May be repeated for up to 6 hours of degree credit.

**WDED700V Doctoral Dissertation (Sp, Su, Fa) (1-18)** Prerequisite: Candidacy.

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## World Literature (WLIT)

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**WLIT1113 World Literature I (Sp, Su, Fa)** An introduction to literature from the beginning of civilization to about 1650. (Same as WLIT 1113C)

**WLIT1113H Honors World Literature I (Sp, Su, Fa)** Introduction to the study of both western and non-western literature. Prerequisite: Participation in Fulbright College Scholars Program or English ACT score of 28 or above. (Same as WLIT 1113C)

**WLIT1113C World Literature I (Irregular)** An introduction to literature from the beginning of civilization to about 1650. Corequisite: Drill component. (Same as WLIT 1113)

**WLIT1123 World Literature II (Sp, Su, Fa)** An introduction to literature from 1650 to the present. Prerequisite: WLIT 1113.

**WLIT1123H Honors World Literature II (Sp, Su, Fa)** A continuation of the study of literary masterpieces of the world. Prerequisite: WLIT 1113H and participation in the Fulbright College Scholars Program or English ACT score of 28 or above.

**WLIT3623 The Bible as Literature (Irregular)** The several translations of the Bible; its qualities as great literature; its influence upon literature in English; types of literary forms. (Same as ENGL 3623)

**WLIT3983 Special Studies (Irregular)** Covers a topic not usually presented in depth in regular courses. Not an independent study. Prerequisite: Junior standing. May be repeated for up to 6 hours of degree credit.

**WLIT4123 Survey of Russian Literature from Its Beginning to the 1917 Revolution (Irregular)** The instructor will discuss the historical and cultural backgrounds while focusing on major writers and will deal with literature as an outlet for social criticism. There will be textual analysis. It will be taught in English. (Same as RUSS 4123)

**WLIT4133 Survey of Russian Literature Since the 1917 Revolution (Irregular)** The instructor will discuss the historical and cultural backgrounds while focusing on major writers and will deal with literature as an outlet for social criticism. There will be textual analysis. It will be taught in English with readings in English. (Same as RUSS 4133)

**WLIT4993 African Literature (Irregular)** A study of modern African fiction, drama, poetry, and film from various parts of Africa in their cultural context. Works are in English or English translation.

**WLIT5193 Introduction to Comparative Literature (Irregular)** Literary theory, genres, movements, and influences. Prerequisite: WLIT 1113.

**WLIT5623 The Bible as Literature (Irregular)** The several translations of the Bible; its qualities as great literature; its influence upon literature in English; types of literary forms. (Same as ENGL 5623)

**WLIT575V Special Investigations on World Literatures and Cultures (Irregular) (1-6)** Independent study of a special topic in world literatures and cultures. Prerequisite: Graduate standing. May be repeated for up to 6 hours of degree credit.

**WLIT600V Master's Thesis (Sp, Su, Fa) (1-6)**

**WLIT603V Special Studies in Comparative Literature (Irregular) (1-6)** May be repeated for up to 6 hours of degree credit.

**WLIT6703 Psychoanalysis and Culture (Irregular)** Readings of key texts in Psychoanalytic thought and cultural criticism including Freud, Lacan, Kristeva, Certeau, Zizek, and others. Selections of Psychoanalytic approaches to literature, film and gender and trauma studies.

**WLIT6803 Postcolonial Theory and Subaltern Studies (Irregular)** Seminar examining the geopolitical (imperial, colonial and national) implications of knowledge and culture. Selected readings of early postcolonial texts by Césaire, Fanon, and Fernandez Retamar, as well as more recent texts by Said, Spivak, Bhabha, Mignolo, Beverly and Chakrabarty among others. May be repeated for up to 6 hours of degree credit.

**WLIT690V Seminar (Irregular) (1-6)** May be repeated for up to 6 hours of degree credit.

**WLIT700V Doctoral Dissertation (Sp, Su, Fa) (1-18)**

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## World Lang, Lit and Cultures (WLLC)

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**WLLC2413 Migrant Experiences in Multicultural Europe (Irregular)** Introduction to the great diversity of Europe. Through three five-week units, students will participate in discussions regarding the identity of the inhabitants of France, Germany, and Italy. The course is team taught by faculty in French, German, and Italian. Does not count toward the foreign language requirement.

**WLLC3173 Introduction to Linguistics (Irregular)** Introduction to language study with stress upon modern linguistic theory and analysis. Data drawn from various languages reveal linguistic universals as well as phonological, syntactic, and semantic systems of individual languages. Related topics: language history, dialectology, language and its relation to culture and society, the history of

linguistic scholarship. Prerequisite: Junior standing. (Same as ANTH 3173, COMM 3173, ENGL 3173)

**WLLC3923H Honors Colloquium (Irregular)** Covers a special topic or issue, offered as part of the honors program. Prerequisite: Honors candidacy (not restricted to candidacy in foreign languages).

**WLLC398V Special Studies (Irregular) (1-6)** A course (not independent study) which covers a topic or author not usually presented in depth in regular courses.

**WLLC4023 Language Teaching and the Internet (Fa)** This course provides senior level undergraduate and graduate students of foreign languages with innovative ways to teach and communicate through the use of the internet as applied to second language learning. Topics of discussion include instructional systems design, web-based technologies, graphics, presentation technologies, and effective utilization of technological tools in language courses.

Prerequisite: Senior standing.

**WLLC4033 Language Teaching and Video Applications (Sp)** This course provides senior level undergraduates and graduate students with the knowledge and skills needed to teach and communicate through the use of video as applied to second languages. Topics of discussion include instructional systems design, videotaping, editing and development for internet and DVD delivery, and effective utilization of video in teaching and communication.

Prerequisite: Senior standing.

**WLLC423V Culture and Civilization: Field Studies (Irregular) (1-18)** May be taken by students participating in overseas workstudy programs approved by the department.

**WLLC504V Translation Workshop (Irregular) (1-6)** Problems of translation and the role of the translator as both scholar and creative writer; involves primarily the discussion in workshop of the translations of poetry, drama, and fiction done by the students, some emphasis upon comparative studies of existing translations of well-known works. Primary material will vary. Prerequisite: Reading knowledge of a foreign language. (Same as ENGL 5043)

**WLLC5063 Teaching Foreign Languages on the College Level (Irregular)** Focus on basic methodological concepts and their practical application to college foreign language instruction.

**WLLC5083 Developments in Second Language Teaching (Irregular)** A review of techniques, strategies, and methodologies and a survey of recent developments in second language teaching.

**WLLC575V Special Investigations (Sp, Fa) (1-6)** May be repeated for up to 6 hours of degree credit.

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